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THE OIL WEEKLY

OIL & GAS ENGINEERING

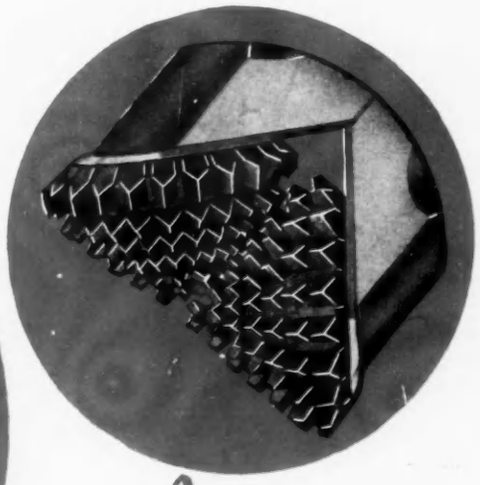
News Statistics

"The Obligation of LEADERSHIP"

True leadership must do more than attain first rank — it must remain there by unvarying and continued merit.

Through the development of tools capable of superior performance, Hughes Tool Company has maintained its position of leadership in the Oil Producing Industry for nearly a quarter of a century.

No Hughes Tool is ever offered for sale until it has proven by complete field and laboratory tests to be the best tool for the purpose for which it was designed.



"THE HUGHES ROCK BIT"

Manufactured by

HUGHES TOOL CO.
Houston, Texas

Service TO THE INDUSTRY

November 13, 1931

ADVERTISERS' INDEX, LAST PAGE

EDITORIAL INDEX, PAGE 19

EFFICIENT
ECONOMICAL
DEPENDABLE

CORE recovery is the standard by which Elliott Core Drills have proved their leadership ever since Elliott pioneered the coring of oil wells. "Long, informative cores at the lowest cost per foot of core recovered" long has been instant identification of this leader in the oil fields. And yet, with all these essential features, absolute dependability is the greatest factor of all in Elliott leadership. You can run an Elliott Core Drill and know you will get the best results possible under any service conditions.

Rotary and Cable Tool types for all formations from soft sand to the hardest rock. Write for catalog and coring suggestions by master drillers.

The Elliott Rotary Core Drill with Cutterhead for medium and fairly hard formations.

Elliott
CORE DRILLING COMPANY
4731 East 52nd Drive
LOS ANGELES, CALIFORNIA.

Mailing Address: Box 55, Maywood, Calif.
Export Office: 150 Broadway, New York

Distributed exclusively in the United States East of the Rocky Mountains, by
REED ROLLER BIT COMPANY

ELLIOTT
Core Drills

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GASO Walking Beam, Rodline and Piston Power PUMPS

Fig 604 Gaso Pump for Gas or Vacuum.

Fig. 601 Gaso Pump for Oil or Water

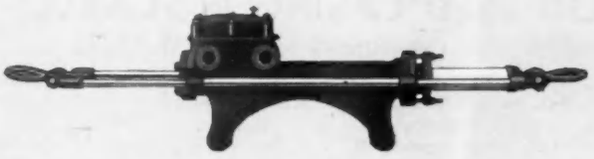


Fig. 201 Gaso Rodline Pump

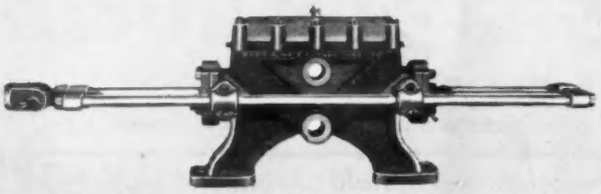


Fig. 301 Jerker Pattern Gaso Pump

Years of Use on Leases and Pipelines the World Over Have Proved their Reliability and Economy

• • •

FIG. 201 RODLINE PUMP is a simple, easily operated and repaired pump for general service. Used in connection with the rod or shackle line between the power and the well, or connected to the power direct with a pitman.

FIG. 604 WALKING BEAM PUMP for Gas or Vacuum is connected to the walking beam with either pipe or wood pitman. Or Fig. 604½ (horizontal type) is connected to the power or surface rods. Built to stand hard usage. Give 26 to 28 points vacuum.

FIG. 601 WALKING BEAM PUMP for Oil or Water is especially adapted for use on leases where no pumping power is available. Remarkably durable. Designed for 400 and 600-pound working pressures.

FIG. 301 PISTON POWER PUMP (JERKER PATTERN) is widely used on high pressure main pipelines and is equally suitable for low pressure work, wherever a push and pull or crank power can be utilized. 750 to 300 pounds working pressure.

Send your requirements for complete data on Gaso Pumps for any purpose.

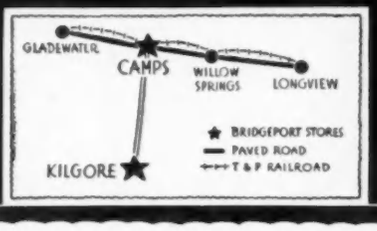
GASO PUMP & BURNER MFG. COMPANY

Tulsa, Okla. Export Office. New York City

GASO PUMPS

for every oil industry need

SAVE MONEY in East Texas by using BRIDGEPORT SERVICE



MANY GOOD BARGAINS IN DEPENDABLE USED EQUIPMENT
ECONOMICAL RENTAL SERVICE TO MAKE YOU MORE PROFIT

President A. A. Buschow invites your business!

BRIDGEPORT'S POLICIES BENEFIT YOU

As a buyer, you have a right to demand the best in prices and quality material from your Supply Store. These are important—but even more essential is a Good Service. Bridgeport's field men—all thoroughly experienced and carefully trained—recognize your rights, and always "go the limit" to please you.

Below are a number of exceptional Bridgeport bargains. Look them over carefully—it will pay you well!

GOOD USED CASING IS SCARCE

BRIDGEPORT'S OFFERINGS F.O.B. EAST TEXAS

3800	feet	6¼" 24 lb. Seamless @	85c
3800	feet	7" O.D. 24 lb. Seamless @	95c
5000	feet	5 3/16" 24 lb. Seamless @	65c
15000	feet	7" O.D. 24 lb. Lapweld @	75c
3800	feet	8¼" 32 lb. Lapweld @	85c
6000	feet	5 3/16" 17 lb. Lapweld @	45c
3000	feet	10" 40 lb. Lapweld @	$1.20
3000	feet	12½" 50 lb. Lapweld @	$1.50
2700	feet	4¾" 16 lb. Lapweld @	40c
300	feet	15½" 70 lb. Lapweld @	$3.75
150	feet	20" 90 lb. Lapweld @	$5.50

DRILL PIPE

7500 feet 6⅝" 25.2 Drill Pipe with Tool Joints on 75c to $1.25
5000 feet 4" 16.6 Drill Pipe with Tool Joints on @ $1.20
3000 feet 3½" 13.3 Drill Pipe with Tool Joints on @ $1.00

New Seamless or Lapweld Casing and Drill Pipe at car load prices—immediate deliveries

BRIDGEPORT STORES offer complete stocks of Rotary Drilling Tools, Equipment and Supplies.

Bridgeport Products Can Be Secured Thru Your Supply Dealers

CREDIT FOR PRICE INCREASE?

What group of individuals—or officials—is entitled to credit for bringing about the increase in the price of crude oil? The Press seems to be considerably divided in its opinion.

Certainly oil men everywhere are happy to see the raise, regardless of where credit is due. They, as well as everyone else, know that anything under a dollar is not a fair price for crude, and the nearer we get to that price the better off the entire industry will be.

Give credit, if you wish, to the Government, or to the regulations on the part of individual States. It would seem however, that the real credit belongs to the leaders in the oil industry itself, who have given untiringly of their exceptional ability and energies to foster a willingness on the part of producers and contractors to hold new development and production in check.

Branches

Wichita, McPherson, Russell and El Dorado, Kansas; Oklahoma City and Seminole, Okla.; Pampa, Camps and Kilgore, Texas.

BRIDGEPORT MACHINE COMPANY
Wichita, Kansas

Foreign Representatives

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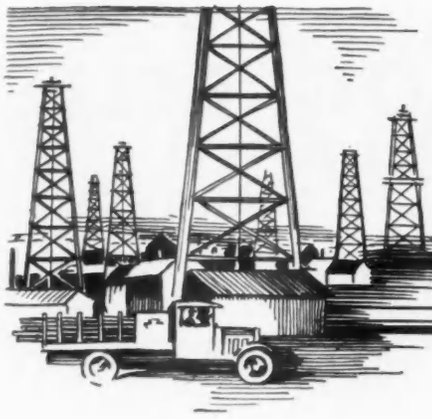
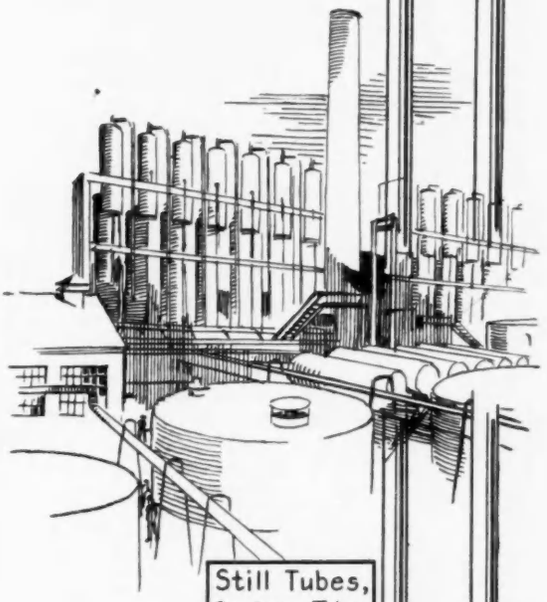


Casing, Drill Pipe, Oil Well Tubing

Oil Line Pipe

From the Sand to the Consumer through



Still Tubes, Condenser Tubes, Refining Pipe

Pittsburgh Seamless PIPING

Gasoline Line Pipe

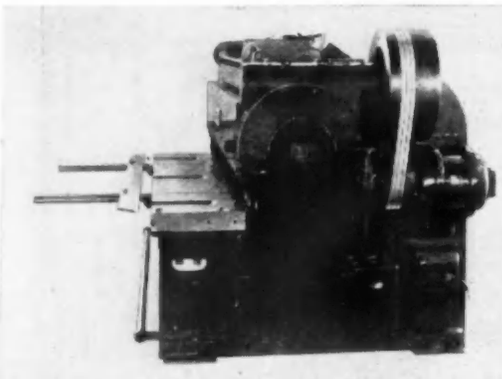
Prompt deliveries from complete stocks at Memphis storage yard

PITTSBURGH STEEL PRODUCTS COMPANY

Pittsburgh New York Houston Division of Pittsburgh Steel Co. Chicago Detroit St. Louis Tulsa

WE MADE COG-BELTS OUT OF V-BELTS . . . AS A RESULT

DAYTON COG-BELT DRIVES GIVE YOUR MACHINERY FAR GREATER POTENTIAL EARNING POWER



Revolutionary New Machine is Factory-Equipped with Dayton Cog-Belts

The Cincinnati Shaper Company announces, in the November national trade publications, a remarkable new line of Squaring and Slitting Shears. These massive Shears are nearly twice as fast as other shears—yet they are unbelievably accurate. Dayton Cog-Belts were adopted for these new machines because of their great gripping power, long life and speed control.

COMPLETE DRIVES—PULLEYS AND BELTS—IN STOCK. ALL RATIOS, FRACTIONAL TO 100 H. P.

Dayton Cog-Belt construction is one of the most important improvements ever made in belt transmission. And it is exclusive with Dayton belts. Cog construction gives Dayton belts the priceless ability to bend easily around small-diameter pulleys at high speed, without heating and without distortion. This means longer life, lower maintenance cost and greater efficiency in every branch of belt power transmission.

And other elements of Dayton Cog-Belt construction are on a par with this great feature. For instance, the belt is die-cut—in fact, it is the *only* die-cut V-belt made. This patented feature gives exact seating action in the pulley grooves. The belt grips firmly—lets go freely—without sticking and without slipping. Furthermore, Daytons are permanently pre-stretched by a revolutionary, patented Dayton process.

Figure for yourself what these great features accomplish—what they will mean in greater profits from your own operation! But get the whole story. Send for a Dayton Cog-Belt Catalog. Refer your transmission problems to our engineers. Their experience is at your service.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO

FACTORY DISTRIBUTORS IN PRINCIPAL CITIES AND ALL WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY SALES OFFICES

1-21

CHECK THESE 10 ADVANTAGES OF DAYTON COG-BELT DRIVES

1. Minimum space required. 2. Positive speed. 3. Smooth starting and running. 4. Vibration eliminated. 5. Easy on bearings. 6. Quiet running. 7. No lubrication required. 8. Less adjustment. 9. Lower maintenance cost. 10. Longer life.

Dayton
COG-BELT DRIVES

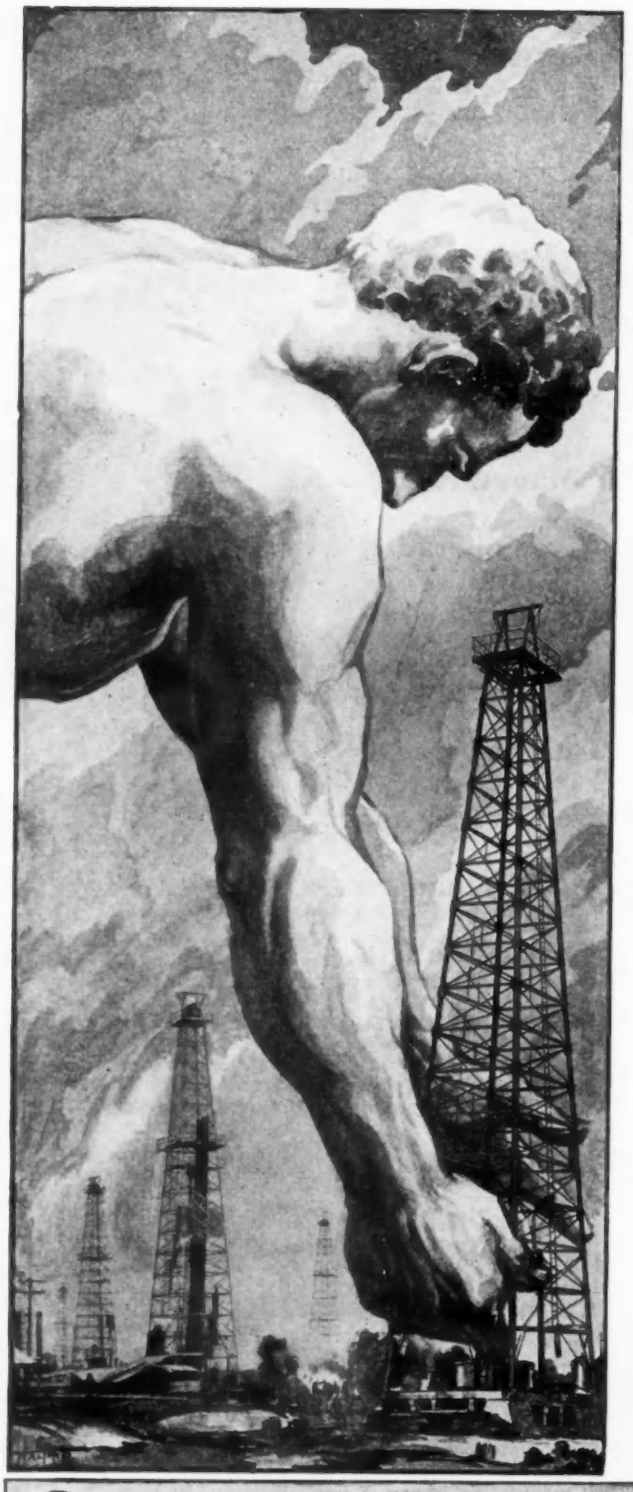
It's BETTER than an

EVEN BET . . .

Mr. Oilfield Equipment Manufacturer, what man or men, in any given operating company actually selects or recommends for purchase the type equipment that you sell? . . . . Maybe he is the same man who had the "Buying Power" a year ago —maybe not—but it is better than an even bet that he is a reader of The OIL WEEKLY * and that he is interested in what you have to say about your equipment through your advertising.

THE GULF PUBLISHING COMPANY
Specialized Oil Publications
HOUSTON, TEXAS

* The OIL WEEKLY has over 25% more paid subscribers in the oil producing and Pipe Line Industry than any other oil or gas paper (See paragraph 10 of latest Audit Bureau of Circulations Statement).



STRENGTH
in Better Fabrication

Parkersburg Derricks are renowned for their strength, rigidity and ease of erection.

This reputation is the result of a design that combines extreme simplicity with the finest ideas of engineering practice, plus painstaking fabrication that assures the accurate fitting of every member.

The result is a derrick that has no equal for strength, rigidity and speed of erection.

Examine a Parkersburg Derrick in the field and be convinced of its superior features.

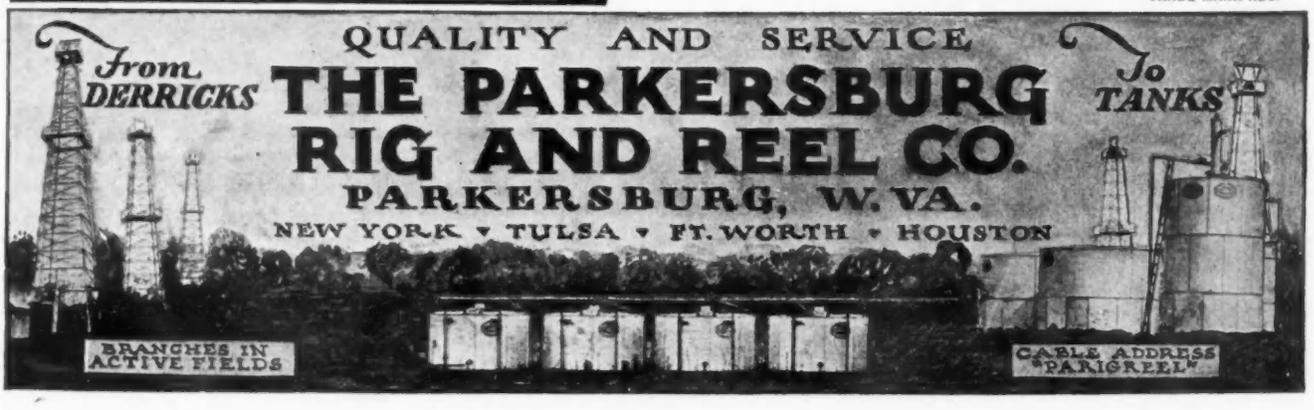
Our nearest representative will gladly give you complete information about this "better fabricated" derrick.

Write for Catalogue 31. Section D.

This Seal of Quality and Service on Parkersburg Equipment is Your Guarantee.

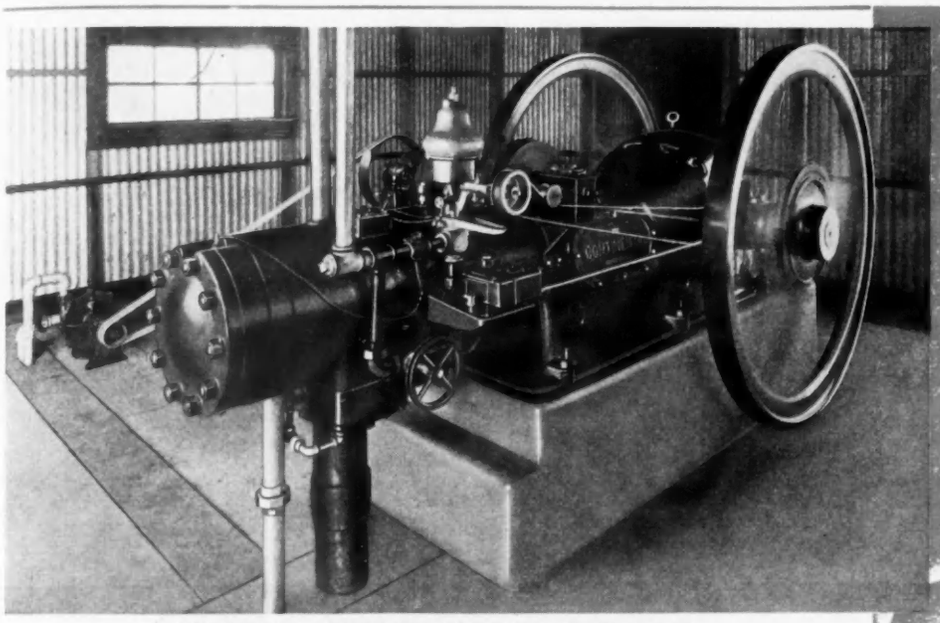
THE PARKERSBURG RIG AND REEL CO.

TRADE MARK REG.


QUALITY AND SERVICE
From DERRICKS
THE PARKERSBURG RIG AND REEL CO.
To TANKS
PARKERSBURG, W. VA.
NEW YORK • TULSA • FT. WORTH • HOUSTON
BRANCHES IN ACTIVE FIELDS
CABLE ADDRESS "PARIGREEL"

They Bought 27 of these Engines Because of

BEST PERFORMANCE RECORD



CONTINENTAL FAIRBANKS-MORSE

40 H. P. 2 CYCLE ENGINE

with Direct Connected Reverse Clutch installed in the East Texas Fields

On the basis of the performance records of eight of these engines operating on their Seminole and Texas Panhandle properties, a well-known company* bought nineteen Continental Fairbanks-Morse Engines. These engines were selected because they had the Best Performance Record...and that is the best reason for choosing any engine...Eight of these engines are Continental Fairbanks-Morse 40 H. P. Two Cycle Gas Engines operating in the East Texas fields. Eleven are the 60 H. P. Continental Fairbanks-Morse Gas Engines, operating in the Oklahoma City fields. Of course, the engines are convertible to oil.

(*NAME ON REQUEST)

"If Continental Sells It . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

GENERAL OFFICES: ST. LOUIS

THE CONTINENTAL SUPPLY CO., LTD.—224 Traders Building, Calgary, Alberta, Canada ...Export Offices: CONTINENTAL EMSCO CO. Inc., 74 Trinity Place, New York—London Offices: 316-17 Dashwood House, Old Broad St., E. C 2. CONTINENTAL EMSCO S. A. R. 7, Strada Eminescu, Ploesti, Romania.

OW-11-13-GRAY

CONTINENTAL

DARLING GATE VALVES

are built to give better and longer service

The photograph below shows one of several installations in which Darling Gate Valves are used on the Gulf cross country pipe line running from Oklahoma to Pittsburgh. Many other cross country pipe lines of major oil companies are similarly equipped with Darling Gate Valves.

Better and longer service, ease of operation and quick repairs in the field, make the Darling Valve of Forged Steel or Semi-Steel a favorite.

DARLING VALVE & MANUFACTURING CO.
WILLIAMSPORT, PA.

NEW YORK
Mid-Continent Distributors:
Frick-Reid Supply Corp.,
International Supply Co.

OKLAHOMA CITY
Foreign Sales Manager:
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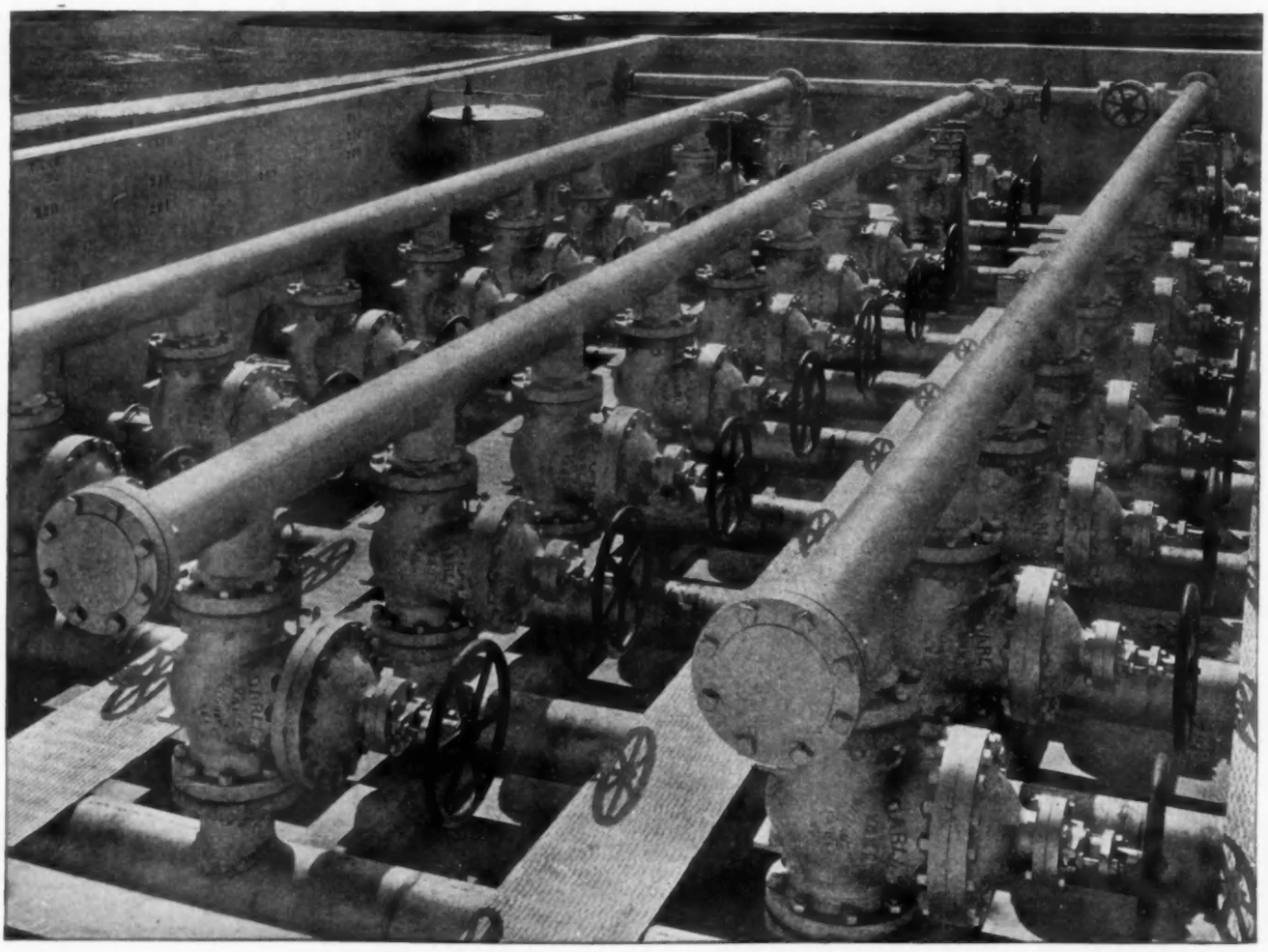
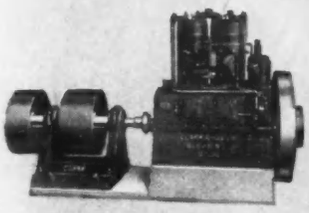
Room 1405, 152 West 42nd Street,
New York City, N. Y.

HOUSTON
California Distributors:
Hickey Pipe & Supply Company
3375 East Slausen Ave.,
Los Angeles, Calif.

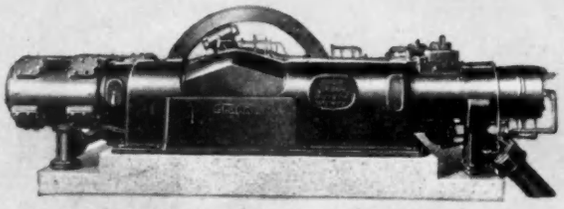


CLARK

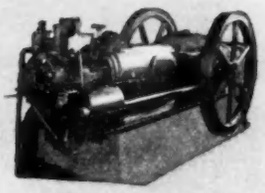
• ENGINES and COMPRESSORS



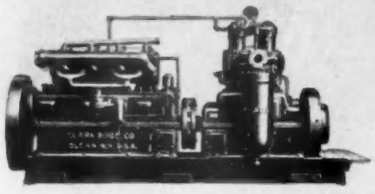
Vertical Pumping Engine



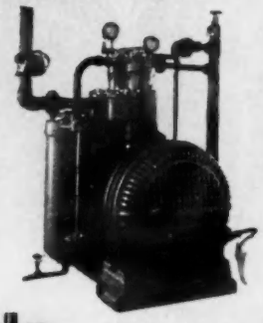
200 B. H. P. Super Two-Cycle Twin Compressor



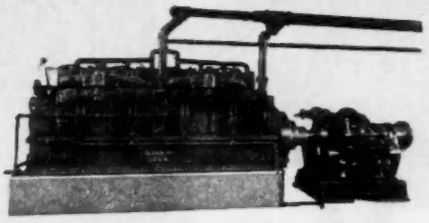
40 H. P. Pumping Engine



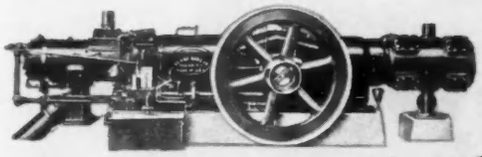
Vertical Compressor



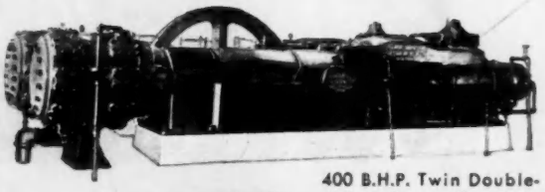
Motor Driven Vertical Compressor



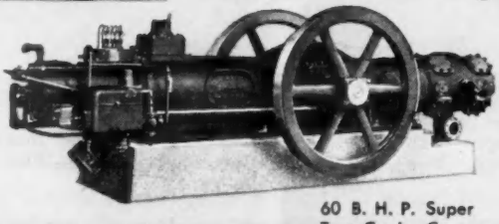
Eight Cylinder Vertical Engine



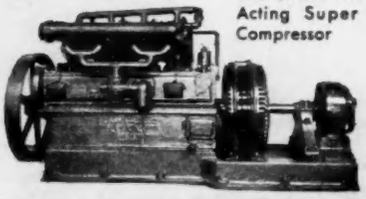
100 B. H. P. Super Two-Cycle Compressor



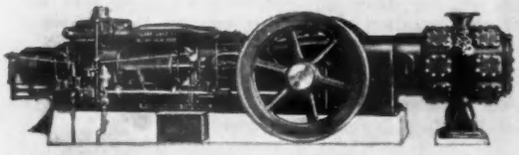
400 B.H.P. Twin Double-Acting Super Two-Cycle Compressor



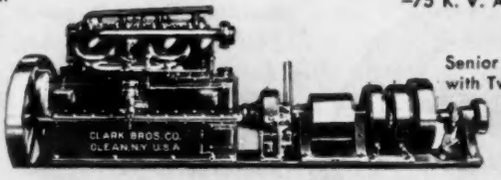
60 B. H. P. Super Two-Cycle Compressor



Gas Engine Generator Unit –75 K. V. A.



200 B. H. P. Double-Acting Super Two-Cycle Compressor



Senior Drilling Engine with Two-speed Clutch

Efficient • Accessible • Durable

CLARK BROS. COMPANY . . . OLEAN, N. Y.

Export Office: New York City

Mid-Continent Sales Offices: Tulsa, Okla.; Houston, Texas

Warehouses: Tulsa; McCamey and Sweetwater, Texas; Artesia, N. M.

California: Smith Booth Usher Co. 228 S. Central Ave., Los Angeles

Foreign Offices: Clark Bros. Company, London; Balkan States Trading & Importing Co., Bucharest, Roumania

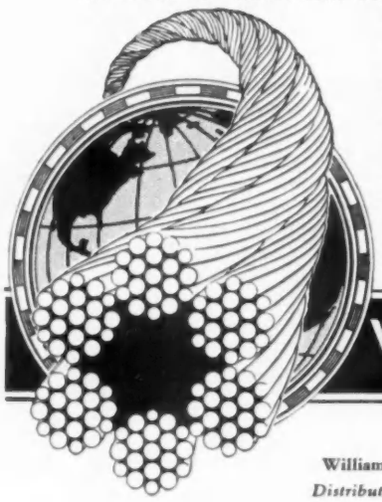
stamina

in WILLIAMSPORT

Telfax Tape Marked Factory Certified WIRE LINES

It's a very simple matter to buy wire lines in the hopes that they will give the service you expect . . . This does not require keen business ability. You know this.

But it does require unusual ability to look thru the maze of claims and counter claims and select the line for your particular job.



Anyone can claim quality, strength, stamina and special advantages and you have to pay the expense of finding out about it.

Let us make this clear to you. We make wire lines . . . nothing else and every man in the works is a specialist in wire line manufacture with the keenest interest in making Wire Lines as good as they can be made.

To this end we draw all our own wire, in fact we control the product from the ore to the finished product.

Then we weave into it a "Telfax" Tape upon which the grade and strength of wire in the line is clearly marked in plain English.

A very valuable protection to the user. No substitution or mistakes can be made between us and you without instant detection.

All this is worth to you more than the line costs. It will pay you to investigate the superior merits of Williamsport on your job.

WILLIAMSPORT WIRE ROPE CO.

OIL COUNTRY SALES OFFICES

Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.; 1516 Chestnut St., Houston, Texas

Distributed by the Bridgeport Machine Company, Wichita, Kansas, and all of their Mid-Continent Branches

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Arkansas City, Kan.	Houston, Texas	Odessa, Texas	San Antonio, Texas
Blackwell, Okla.	Hobbs, New Mexico	Pampa, Texas	Tulsa, Okla.
Borger, Texas	Lewistown, Mont.	Seminole, Okla.	Wichita Falls, Texas
Casper, Wyo.	Maud, Okla.	Shidler, Okla.	Wink, Texas

Main Office and Works: Williamsport, Pa. *Genèral Sales Offices:* 122 S. Michigan Ave., Chicago, Ill.

X-MARKS THE "HOT SPOT"

Where you can SAVE MONEY with BYERS Wrought Iron

YOU cannot discredit the ability of a "hot spot" to worry a pipe-line superintendent. X marks the kind of spot —salt water drainage or alkali soil, gumbo or river crossing, gypsum area or cinder fill—where trouble breaks loose most frequently, causing tie-ups, expensive replacements and loss of hard-earned revenue.

What's the answer? With no ifs, ands or buts strung to it, you'll find the answer when you study the service histories of old pipe-lines. They reveal, simply, directly and convincingly, that genuine wrought iron has no satisfactory or economical equal for combating "hot spot" corrosion.

Standard of wrought iron quality since 1864, Byers Pipe today is the best wrought iron pipe ever produced. Modern manufacturing practices permit more accurate control of every step in production than ever before in wrought iron's history.

Call in a practical Byers oil country engineer. Make him show you some case histories—actual records of wrought iron service. Then draw your own conclusions!

A. M. Byers Company, Pittsburgh, Pa. Established 1864.

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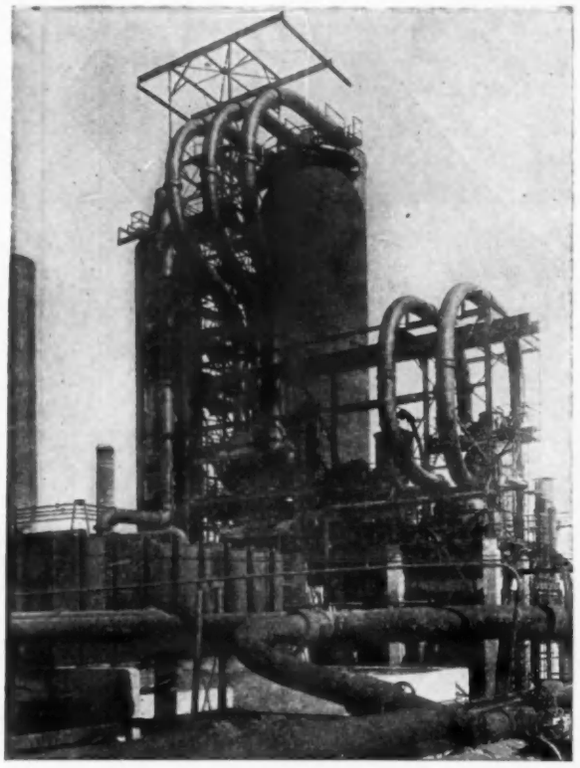

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THE OIL WEEKLY

November 13, 1931
Vol. 63, No. 9

S. W. ROBINSON
Editor

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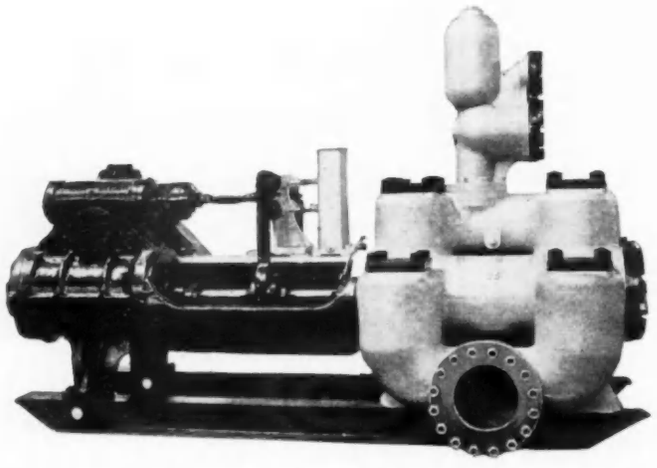

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THE OIL WEEKLY

VOLUME 63, NO 9 NOVEMBER 13, 1931

Institute Hears Argument For Unit Operation

DIRECTORS ASKED TO ENDORSE PLAN FOR INDUSTRY

By SPENCER W. ROBINSON

CHICAGO.—The "New Conception" of operating practice, or to paraphrase Will Rogers; "The Substitution of the Young Plan for the Old Plan," has been dignified for the first time with the introduction this week of a resolution to the board of directors of the American Petroleum Institute advocating the support of the industry in behalf of the proposed method for the unit operation of oil pools.

Action of the board with respect to the proposal is a matter of speculation at this writing but it is significant that the matter has been given recognition by this body, and some definite action is anticipated by those executives attending the meeting in Chicago.

The subject is one of long contention among the leaders of the industry. It was first sponsored by Henry L. Doherty, who later was responsible for the appointment of the Federal Oil Conservation Board for the consideration of oil resources and their possible influence upon the national defense of the country.

The meeting at Chicago marked the first time that the proposed method of operation has reached the definite status of consideration for ways and means of accomplishment through the industry itself. The demand for a declaration favoring unified operation of pools was vigorously presented by J. Edgar Pew, vice president of Sun Oil Company and former president of the A. P. I. He declared the industry could double the average production of pools, at the same time cut in half the number of wells required, under a plan of unification. That is, in the next 20 years instead of having to drill 400,000 wells, costing $20,000,000, it would produce just as much oil from 200,000 wells costing $10,000,000; and there would still be left half the oil in the ground and recoverable. He proposed not only scientific production, but equitable distribution among the pool owners, in proportion to their acreage holdings.

Admitting that he had formerly opposed one program aiming in this direction, Mr. Pew said he had always favored unitization, and declared it would economize gas, which, being recirculated through the sands, would produce more oil; it would avoid much of water encroachment on oil fields; it would greatly increase recovery; and, by enabling effective control of production in flush fields, would prevent those excesses of production which have been so ruinous to the industry.

Pointing out that in every direction save that of production the industry's methods have enormously improved in recent years, Mr. Pew declared that the time had come when production methods must be reformed. He boiled his proposal down to two propositions:

1. Unqualified adoption of a unit plan of production.
2. Acceptance, as a fundamental principle, that each owner in a pool is entitled to his equitable share in its oil and gas, as opposed to the present archaic rule of everybody getting all he can as fast as he can.

"I believe 75 to 90 per cent of the industry favors such a program," declared Mr. Pew. "I want to see us solidly unite in supporting it."

Quoting from a statement by President Hoover when he was secretary of commerce, that an amendment to the Sherman Act permitting unified operation "seems to be advisable," Mr. Pew expressed the confident belief that both the public and the legislative attitude toward the industry are now much more understanding and friendly than in the past, and that if legislation were needed there is most favorable prospect of getting it, provided the industry unitedly favors it.

In conclusion, Mr. Pew said:

"We are going to have legislation, whether we will it or not. Those who want better methods should be permitted to use them, others should be compelled to. The signs of the times make plain that delay on our part will not be tolerated. An industry that has seen half its production under martial law, and all of it under the accusation of incompetency and profligacy, may well take stock of its future. It is useless longer to inveigh against government interference with business, or to denounce as revolutionists any who disagree with us. The country, the world, look upon us as trustees for a vital resource. If we

are to retain our trusteeship, if we are to keep our hold on the industry, we must win back a public confidence that we have lost."

The legal aspect of the unified production program was discussed by W. P. Z. German, Skelly Oil Company, who declared that the plan was sound and logical and that there should be no legal obstacle to it. It would conserve supplies, would insure equity, and promote prosperity. He discussed the peculiar nature of gas and oil reposits, the equities as among owners of the surface; and the necessity to conserve gas. To accomplish these things, he said, ought to be commended instead of condemned. He considered some legislative regulation necessary to enforce unity of of action in each pool, and to remove fear of the anti-trust laws, it being obviously impossible to insure to each land owner a right to take out the oil lying immediately under his holdings. The obvious alternative was to distribute the entire production of the pool, in proportion to the surface holdings; and he was confident that such a law would be held valid.

Common Law Cited

It is a common law maxim that no man may so use his property as to injure his neighbor. Underground waste would be prevented through unification; and so would surface waste—the losses due to over-production, hurried storage, and the wrecking of prices by reason of over-production.

Legislation to carry such a program into effect would be constitutional, Mr. German said, if it bears a reasonable relation to the object of conservation and the protection of the co-equal rights of the producers. If the plan, incorporated into law, be otherwise valid, the fact that it would promote the prosperity of the industry would not be an objection, but would rather constitute additional grounds for sustaining it. The courts have several times sustained police regulations, having as their sole object the promotion of a particular industry's prosperity.

John R. Suman, Humble Oil & Refining Company, Houston, analyzed the engineering and scientific phases of the unification proposal, explaining the peculair characteristics of crude oil in a pool, the necessity to conserve the expulsive power of the pool's gas in the interest of all owners, and explained how wells should be spaced and drilled in behalf of a scientific development. He recited the experience in developing various pools along these lines at Kettelman Hills, Yates, Sugarland, Van, Big Lake, etc. None of the people, he insisted, who had participated in such a scientific plan of development in any of these pools would be willing to go back to the old fashioned methods.

By way of emphasis, Mr. Suman gave some general statements regarding the comparative costs of co-operative development and competitive development of pools, the conclusions being decidedly in favor of co-operation. He particularly stressed that the application of correct methods was certain to increase very greatly the ultimate recovery from the pool.

A general feeling of optimism prevails among those attending the A. P. I. and hopes are expressed that the economic position indicated by the reports of the voluntary committee

NEW A. P. I. DIRECTORS NAMED

Chicago.—Directors to fill vacancies created by expiring terms, nominated by the board of councilors and elected by the American Petroleum Institute, are as follows:

Production Group

PACIFIC COAST SECTION — W. C. McDuffie, Pacific Western Oil Company, Los Angeles.

ROCKY MOUNTAIN SECTION—B. B. Brooks, Consolidated Royalty Oil Company, Casper.

CENTRAL UNITED STATES—H. V. Foster, Foster Petroleum Corporation, Bartlesville, Oklahoma; Charles F. Roeser, Roeser and Pendleton, Fort Worth, to succeed W. C. Franklin, Tulsa; J. Edgar Pew, Sun Oil Company, Philadelphia, and Frank Philips, Phillips Petroleum Company, Bartlesville.

EASTERN UNITED STATES—O. D. Donnell, Ohio Oil Company, Findlay, Ohio.

Manufacturing Group

PACIFIC COAST—R. D. Matthews, Union Oil Company of California, Los Angeles, to fill vacancy caused by death of E. W. Clark of same company.

ROCKY MOUNTAIN—T. A. Dines, Midwest Refining Company, Denver.

CENTRAL UNITED STATES—John L. Gray, Deep Rock Oil Corporation, Tulsa, and P. M. Miskell, Empire Refineries, Inc., Tulsa.

EASTERN UNITED STATES—Charles L. Suhr, Pennzoil Company, Oil City, Pennsylvania.

Distribution Group

ROCKY MOUNTAIN—W. H. Ferguson, Continental Oil Company, Denver, to succeed E. T. Wilson, Denver.

CENTRAL UNITED STATES—Edward G. Seubert, Standard Oil Company (Indiana), Chicago.

EASTERN UNITED STATES—W. T. Holliday, Standard Oil Company of Ohio, Cleveland.

Transportation Group

TANK CARS—Lauren J. Drake, Union Tank Car Company, Chicago.

Natural Gas Group

Floyd C. Brown, Continental Construction Company, Chicago, to succeed Henry C. Morris, Dallas Gas Company, Dallas, Texas.

Natural Gasoline Group

Edgar J. Marston, Texas Pacific Coal & Oil Company, Fort Worth.

Foreign Trade Group

FAR EAST — Herbert L. Pratt, Standard Oil Company of New York, New York.

MEXICO AND SOUTH AMERICA—Richard Airey, Asiatic Petroleum Company, New York, to succeed C. M. Fuller, Richfield Oil Company, Los Angeles.

At Large Group

W. N. Davis, Phillips Petroleum Company, Bartlesville; R. C. Holmes, The Texas Company, New York; F. A. Leovy, Gulf Production Company, Tulsa; J. F. Lucey, Lucey Petroleum Company, Dallas, Texas; E. W. Marland, Ponca City, Oklahoma; John H. Markham, Jr., Tulsa, to succeed Thomas A. O'Donnell, Los Angeles; Wallace E. Pratt, Humble Oil & Refining Company, Houston; Frank R. Coates, Henry L. Doherty & Company, New York; E. B. Reeser, Barnsdall Corporation, Tulsa; H. F. Sinclair, Sinclair Consolidated Oil Corporation, New York; and J. W. Van Dyke, Atlantic Refining Company, Philadelphia.

New Officers Named

Amos L. Beaty has been elected president of the American Petroleum Institute with pay, and will have active charge of the institute's affairs.

H. B. Gallagher, Shell Oil Company, San Francisco, Vice President at Large.

C. F. Roeser, Roeser and Pendleton, Fort Worth, Vice President for Production.

Dan J. Moran, Continental Oil Company, Ponca City, Vice President for Refining.

W. T. Holliday, Standard Oil Company of Ohio, Vice President for Marketing.

Axtel J. Byles, Tidewater-Associated Oil Company, New York, Treasurer.

of the Federal Oil Conservation Board and the Institute will obtain during the next few months. (For particulars see further reports in this issue.)

Considerable progress has been made by the technical divisions for production and drilling during the past year and much progress is being forecast by engineers for the coming months. Attendance at the divisional meetings of production and drilling practice evidence the prominence that these departments occupy in the industry activities during the coming year.

"Efforts to promote conservation have been important factors in trends and improvements in crude oil and natural gas production practices in the past year," W. W. Scott, Humble Oil & Refining Company, Houston, told a group session of the American Petroleum Institute's Division of Production today. Reporting as chairman of the division's topical committee on production practice, Mr. Scott said more consideration than ever before has been given to fundamental principles governing the recovery of oil, and that substantial progress has been made through growing appreciation of the value of gas energy and its proper utilization in producing oil efficiently and economically.

More engineering skill is being applied to completing and equipping oil wells than at any time in the history of the industry and the rate of production in many areas has been controlled through proration egreements. The viewpoint of many operators consequently on procedure in handling wells has been changed, Mr. Scott disclosed, with the result that universal practice now is to conserve reservoir gas by various methods, to restrict flow to assure low gas-oil ratios, and to make general application of back pressure.

He reported that progress was noticeable in the adoption of methods and procedure for utilization of reservoir energy in producing oil and gas, and the industry in general has shown much interest in all programs dealing with maintenance of pressure in flush fields.

His observations in unregulated fields, he said, indicated that some 90 per cent of physical or underground waste occurs during and immediately following the flush stage of production, and consequently maintenance of pressure properly applied must have its inception in the early life of a field. Development of deeper pay sands in the Santa Fe Springs field of California was said to have brought about the necessity of pumping wells at a greater depth than ever before, and through careful selection and construction of equipment, and intelligent operation, it has been possible successfully to pump wells 5000 to 7000 feet deep, and one well has been producing with the pump located 7801 feet below the surface.

Improvements in drilling practices and equipment have been numerous in the recent past, and many are of prime importance in the accomplishment of drilling to deeper zones and obtaining improved drill holes both in shallow and deep territory, it was said by J. R. Gignoux, of Shell Oil Company of California, Los Angeles.

Mr. Gignoux's paper, "Recent Developments In Drilling Technique and Equipment," was compiled from resumes by members of the Institute's Division of Production, Topical Committee on Drilling Practice. New sizes of derricks, particularly those having a height of 136 feet and base 26 feet square, have come into use and are replacing to a degree the once universally accepted derrick 122 feet high and 24 feet at the base, it was reported, the larger structures facilitating the work of deeper drilling, handling longer strings of drill pipe and the employment of greater hoisting power and speeds. Considerable progress has been made in the construction of rigs for ocean drilling, these being supported on piers, cofferdams and by other means adapted to stable and unstable foundations. An increase in the application of electrical motors and internal combustion motors for prime movers, replacing steam operated drilling rigs which once constituted 90 per cent of the equipment, was noted. However, steam equipment has been improved as regards available power and efficiency.

Deep drilling has necessitated the development of stronger casing and drill pipe with the result that there has been established a "D" grade steel having minimum ultimate tensile strength of 95,000 pounds and minimum yield of 55,000 pounds per square inch, as compared with the 75,000 and 45,000-pound ratings, respectively, of grade "C" steel.

One of the most interesting recent developments in drilling practice was said to be the use of automatic drilling control equipment which is regarded as an aid to drilling straight holes. Weight on bottom, or bit pressure, can be regulated and success in drilling was said to rest largely with the driller's ability to predetermine the setting.

CHICAGO.—Following an address at the opening session of the Twelfth Annual Meeting of the American Petroleum Institute on the "Anti-trust Laws and Their Effect Upon Modern Business," delivered by Oscar Sutro, Standard Oil Company of California, Henry L. Doherty sprang to his feet and said, "Mr. Chairman, is there not to be a discussion of Mr. Sutro's talk?"

President Reeser invited Mr. Doherty to the speaker's platform, where he began an animated talk.

Disagreeing vehemently with what Mr. Sutro had said, he said that he did not want the impression to go abroad that the oil industry was unanimously in agreement with what Mr. Sutro had said, that he for one did not agree with it, and was not in sympathy with it. He declared that the industry would be split wide open if the Institute began a fight on the Anti-trust laws and expressed the belief that the industry's plight would not have been improved during the past few years if the anti-trust legislation had not been in effect.

His talk was short and emphatic, and the meeting was adjourned immediately after he had finished.

Statistical Committees Predict Lessened Crude Demand

REPORTS independently compiled by the statistical committees of both the American Petroleum Institute and the Federal Oil Conservation Board, for the nine-months period ending June 1, 1932, agree on the opinion that less crude oil will be required than during the same period of 1930-1931. While there will probably be a demand for gasoline equal to that of the preceding nine-months period, it is pointed out by both committees that an increasing proportion of the gasoline supply will probably come from cracking operations. The unwieldy situation as regards gas and fuel oil stocks dictates the necessity for maintaining and, advisedly, increasing cracking operations. This will mean a lower demand for crude oil from the producer. The committee representing the American Petroleum Institute estimates the daily demand for American crude oil at 2,297,000 barrels, while the committee representing the Federal Oil Conservation Board places the demand at 2,384,000 barrels a day. The conclusions reached by both committees are as summarized below.

▼ ▼ Federal Oil Conservation Board Report ▼ ▼

AN increase in domestic oil production of 21,600,000 barrels and a reduction in imports of more than 15,000,000 barrels during the nine months from October, 1931, to June, 1932, inclusive, as compared with the corresponding period a year ago, is seen in a report on probable oil requirements for the period submitted to Secretary of the Interior Wilbur, chairman of the Federal Oil Conservation Board, by its volunteer committee on petroleum economics.

The total crude oil supply required for the nine months, the committee reported, is estimated at 678,000,000 barrels, a decline of 2.1 per cent from the 692,442,000 barrels actually provided during the same period in 1930-31, of which domestic production is placed at 651,846,000 barrels against 629,236,000 barrels, an increase of 3.6 per cent; imports at 24,660,000 barrels against 39,764,000 barrels, a decline of 38 per cent, and storage withdrawals at 1,494,000 barrels against 23,442,000 barrels, a decrease of 93.6 per cent.

Pointing out that trends in motor fuel demand have been in general accord with the estimates of the committee made last August, the respective rates of increase in domestic demand and decrease in foreign are shown by the report to have differed, actual demand increasing over the corresponding period of last year by two per cent instead of four per cent, as expected, and foreign shipments declining 26.6 per cent against an estimate of 18 per cent.

"For the whole of the nine months' period now under consideration," Secretary Wilbur is told in the report, "the committee anticipates a relatively small increase in domestic demand in comparison with the similar period of a year ago and a decline of 19.2 per cent in foreign demand. The provision made for additions to refinery gasoline stocks is considerably less than the actual increase a year ago. The total motor fuel requirement, consequently, is calculated at 1.6 per cent less than that recorded for the nine months' production ended June 30, 1931."

The committee's estimates give consideration to such factors as the increased traffic reported this summer at various points, such as the national parks, etc., the increased number of taxicabs, the additional day next February as a result of leap year, increased scheduled air transport operations, and the George Washington bicentennial celebrations and the Olympiad at Los Angeles, all of which will serve to increase consumption.

"In this report," it is stated, "the committee has endeavored to outline a program which would contribute to the stability of refining operations and permit a furtherance in the efforts of the industry to reduce gasoline stocks to economic levels. It is felt that the gasoline stock levels indicated are possible of attainment and that a continuation of the trend would lead, at the close of the 1932 summer season, to stocks of approximately 28,000,000 barrels, or about the quantity indicated by the industry as adequate for working stocks at the close of a summer period.

"The indicated monthly refinery crude throughput was calculated so as to avoid sharp fluctuations in the monthly operating status; to reduce the probability of adding excessive quantities of gasoline to refinery storage during the period of the year in which stocks normally increase; and to adjust the probable fuel oil output sufficiently to offset the influence of the indicated decline in demand. A further curtailment of fuel oil production appears essential to the maintenance of economic stocks.

"In view of the decline in fuel oil demand and the resulting stock increases, the manufacturer of relatively more gasoline and less fuel oil appears to be essential to the maintenance of an economic balance in the oil industry. This may be accomplished through increased 'cracking' or by the inreased production and utilization of natural gasoline. In the present report, crude runs at refineries are based upon a projected gasoline output equal to 48.839 per cent of the crude run. This is somewhat higher than the ratio of 48.354 per cent used in the preceding report and is

definitely higher than the average ratio of 47.854 per cent reported for the nine months ended June 30, 1931.

"Although the probable quantity of domestic crude oils required for the operations outlined, has been indicated, no separate endeavor has been made to determine the proper production levels or the allocation of crude oil production or requirements between producing areas. State organizations, directly concerned with the prevention of waste through production control, have indicated a daily average crude oil production of 2,379,000 barrels in the United States during the remainder of the present year and all of 1932.

"A daily production of 2,379,000 barrels would provide a total of 651,846,000 barrels during the nine months under consideration. This would compare with a total of 629,-236,000 barrels produced during the nine months ended June 31, 1931. In other words, the daily production rate of 2,379,000 barrels would be approximately three per cent higher than the daily average of 2,305,000 barrels recorded for the preceding period. According to the committee's calculations, a program which would consider the stability and continuity of refining operations and the adjustment of supply to probable demand would require a total of 653,-340,000 barrels of domestic crude oil, or a daily average of 2,384,000 barrels. This economic requirement would include the supply of crude oil both from production and through stock withdrawals. If actual operations follow the trend of economic requirements as outlined, the daily production of 2,379,-000 barrels would supply virtually all of the requirements and withdrawals from storage would be negligible.

"With regard to crude oil and gasoline imports, the committee based its calculation upon the premise that the quantity of crude oil imported into the United States would equal approximately the quantity shipped out of the country and that gasoline imports during the whole of 1932 would be reduced 25 per cent from 1930 levels.

"By the reduction of crude oil imports to a quantity comparable with exports, an average figure of 90,000 barrels daily would result. For the period under consideration, this would equal a total of 24,660,000 barrels, a reduction of 38 per cent from the total of 39,764,000 barrels imported during the nine months ended June 30, 1931, in which period crude oil imports averaged 146,000 barrels daily.

"During the first six months of 1930, gasoline imports totaled 8,158,000 barrels, a monthly average of 1,360,000 barrels. For the first six months of 1932, the committee has provided for monthly gasoline imports approximating 1,000,000 barrels, or a reduction of slightly more than 25 per cent from 1930 levels. The monthly average for the whole of the nine months' period is larger than for the first half of 1932, on account of larger imports expected during the final quarter of 1931."

▼ ▼ American Petroleum Institute Report ▼ ▼

IT is estimated that the industry may expect a total demand for gasoline during the nine months period, October, 1931, to June, 1932, approximating that which prevailed during the corresponding period of the previous year. Domestic demand is expected to increase from two per cent to three per cent while present indications are that exports will continue the trend established during previous months and show a further decrease from 15 per cent to 20 per cent, however, with the decline in foreign demand is the prospect of a partially offsetting reduction in the importation of gasoline and the gasoline content in the smaller quantity of crude oil imports.

Our statistical sub-committee feels that it is economic to continue cracking operations at present levels. This is prompted by the large amount of cracking material available and the desirability of balancing the gas and fuel oil situation as well as that of gasoline.

Consideration of the two reports indicates that required refinery output of gasoline will be approximately that which was produced in the corresponding foregoing period. The 33,330,000 barrels of gasoline in storage at refineries on October 1, 1931, indicates a surplus of approximately 6,000,000 barrels above working stocks required on that date of 27,184,000 barrels. It is, however, apparent that both committees thought it inadvisable to indicate a complete liquidation of this surplus by April 1, 1932, the usual data of peak stocks, due to the very low level of refinery operations required in the period immediately following. For this reason both committees, in order to permit of a more uniform rate of refinery production, extended the period of liquidation to July 1, 1932, indicating stocks of approximately 43,000,000 barrels as of April 1, in spite of still being of the opinion that economic stocks of refinery gasoline on that date should approximate 40,000,000 barrels. However, gasoline stocks on April 1, 1932, will be greatly in excess of 43,000,000 barrels unless the current rate of crude throughput is materially reduced.

Crude Oil

The two reports are in substantial agreement in the items of crude run to stills and crude used as such. There is, however, a difference of approximately 19,000,000 barrels in the demand for domestic crude oil. This is one of the chief points of variance between the two reports, occasioned by a difference in the estimates of imports and exports of crude oil. The Voluntary Committee on Petroleum Economics based its estimate on the premise that imports and exports would balance while the A. P. I. committee attempted to forecast these items. The net result of the crude oil section of the A. P. I. report is that the demand for domestic crude oil will be 629,300,000 barrels for the period or 2,297,000 barrels per day. This is approximately 134,000 barrels below the current rate of production. Your attention is specifically directed to the daily average quantities required by months which decline to a low of 2,084,000 barrels per day during March. This is 213,000 barrels per day below the average for the period. To indicate how much of the foregoing requirements should come from production and what portion should come from stocks was not felt to be within the province of this committee. It is, however, our opinion that the present excessive stocks of crude oil should be further materially reduced during the period.

Gas and Fuel Oil East of California

(California Not Shown Due to the Abundance of Stocks)

A detailed forecast covering gas and fuel oil east of California is available only in the A. P. I. committee's report although both committees recognize the importance of maintaining an economic balance in these products as

(*Continued on page* 44)

The Policies Involved

By J. EDGAR PEW
Sun Oil Company, Philadelphia

Unitized Production Is Feasible, Economic, Profitable

IN the last 16 years improvements in oil refining have made it possible to double our recovery of gasoline from the barrel of oil.

In the next five years I am convinced that the industry can double its average recovery of crude per well, if it will unite on a unit plan of production, along with the conception that each owner in a pool is entitled to an equitable share of its oil and gas rather than to capture as much as he can, as fast as he can. Unitized production is now recognized as technically feasible, economically sound, a means of conserving oil resources, and profitable.

I believe the time is ripe to accept this program. If we do not accept it of our own volition, it will be forced on us; and if we wait for this, we will face a long struggle with contradictory laws, conflicting regulations, hostile public opinion, and chaotic conditions within the industry.

In refining, the industry's advances rate it among the most progressive of manufacturing activities. In storage and transportation it has made a proud record; and in distribution and marketing it has brought its products, at low cost, within easy reach of every one of the country's 25,000,000 motor cars. Finally, gasoline taxes have provided a modern highway system for the continent.

Our weakness has been in production; a weakness for which the industry is not fairly to be blamed, because the laws have manacled it. But I am sure the time has come when a way of escape may be opened, if we shall but act unitedly, wisely, and with a view to both the public's and our own interest.

Advances in Refining Unparalleled by Other Industries

Consider what has been accomplished in refining. I know of no industry whose advances have outpaced our accomplishments in better, cheaper, more efficient refining. Petroleum's products are legion; the demand for them has constantly multiplied. We have not only kept up with this demand, but at the same time have made products less expensive, and with constantly lessening drafts on our resources of crude. It constitutes an achievement I believe unparalleled by any other industry. We get more gasoline from one barrel of crude petroleum than, so recently as 1914, we got from two. This has been our response to demands for conservation, to warnings of possible exhaustion, and—most of all—to the industry's intelligent apprehension of its problems. Moreover, better pipe lines for crude, the piping of gasoline, gas-tight tanks, reduced fire hazards—these have saved millions of barrels of potential gasoline annually.

Producing Industry Has Applied Lessons of Science and Experience

But in the producing branch we have been charged with recklessness, lack of vision, and deliberate unconcern for the public interest. Of these accusations I enter the broadest denial. The industry has at great cost systematically applied the lessons of science and experience. Deeper wells, improved drilling machinery, the aid of the geologist and the geophysicist, have enabled us to reach producing horizons that, a few years ago, might as well have been in the moon; better control has largely ended the wastes of flush production.

Production of Oil Is Still Greatest Problem of the Industry

Nevertheless, production remains our greatest problem. The present practices in leasing and leaseholding—the prevailing legal restrictions—prevent co-operations to lessen drilling cost, increase recoveries, and make our developed fields serve as reserves—leaving the oil in the ground until it is needed, instead of rushing madly to get it out regardless of whether or not there is need for it at the moment.

Because of the unreasonable restrictions now imposed on us, these things result:

a. A great waste of valuable gas, which if properly conserved should be re-circulated through the sands, producing more oil.

b. Improper development of the fields, causing water encroachments.

c. Loss in ultimate recoveries of oil estimated at 50 per cent.

d. A market condition that forces abandonment of smaller fields and wells because they cannot compete with oil uneconomically produced from flush fields.

The industry has lost hundreds of millions of dollars in the past five years through its producing methods. The public has lost as much in values, and stands to lose yet much more in future through increased prices. For its enjoyment of 10-cent gasoline today, the public will one day pay a heavy price penalty. The states will lose through unemployment and lessened taxation values.

It is not my purpose to go into details with which you gentlemen are thoroughly familiar. I am, however, challenging you frankly to consider with me these losses, and our responsibility. By our failure in dealing with production, we hold ourselves up as inefficient, blind, and lacking in the qualifications of good business men. We are subjecting ourselves to the menace of injurious legislation—perhaps of having the industry itself, second greatest in the land, as we are proud to say—wrested from our hands. Have we forgotten what happened to the railroads a few years ago? "Oh," you say, "but that was in a wartime emergency." Yes, it was; but today, in a time of peace, we see the grip of martial law fixed on more than half the country's oil production. Who shall say how far such a precedent may not be followed, or into what other fields? Who can insure the stability of our economic system when such things can befall?

(*Continued on page* 49)

of "The New Conception of Oil Production"

Governing Principles

By JOHN R. SUMAN
Humble Oil & Refining Company, Houston

DURING the last few years serious attention has been given to the fundamental principles governing the production of oil. As the study of these principles has progressed, it has become more and more evident, from the point of view of efficient recovery of oil and gas, that customary practice relating to well spacing and rates of withdrawal has dominated oil pool development, and that too little consideration has been given to the physical conditions and the various forces at work in the reservoir itself.

Basic Principles

It is the purpose of this paper to enunciate the basic principles under which a reservoir of oil should be exploited and produced, assuming that it is possible to disregard entirely all surface property boundaries and all restrictions imposed by existing laws against cooperative agreements in the production of raw materials. In order that the most advanced scientific principles may be utilized for the maximum economic recovery, and in order to give equity full play, it appears evident that certain parts of the present laws must be revised.

The premises in the application of these fundamental principles are:

1. Oil and gas in a reservoir are mobile, and move underground without regard to property lines on the surface, differing in this respect from other natural minerals.

2. The pool should be produced in the most efficient manner in order to lower costs, increase recovery, and minimize waste.

3. The oil and gas recovered from a pool should be distributed equitably among the several owners of the pool.

An oil pool, and likewise any portion of the pool covered by a given surface leasehold, contains a determinable volume of oil and gas at all times. The oil and gas are not evenly distributed throughout the pool, and the volume per acre may vary considerably in different parts of the structure. The relative volume of oil and gas underlying the various leaseholds is subject to determination as drilling proceeds.

Each pool possesses reservoir energy which is derived from the pressure exerted by the gas, both that dissolved in the oil and the free gas which usually lies above the oil, and in most cases from the pressure exerted by water moving into the pool from below or from the sides. Reservoir energy is also referred to in such terms as "gas energy" and "energy factor." It is responsible for the movement of the oil to the wells drilled into the pool, and lifts it to the surface during the flowing life of the pool. Reservoir energy is the common property of all owners of the pool, and must be utilized for the greatest good of all. As oil and gas are produced, the various owners in the pool are entitled to share in the production in proportion to the acreage content of their land, and are entitled to share in the use of the reservoir energy in proportion to the acreage which they own. Wells for oil production should be drilled at points where the oil can be withdrawn most efficiently, irrespective of land ownership, and the oil distributed equitably among all owners without regard to the location of the producing wells.

Exploration

Before drilling is started, the general outline of the pool is indicated by the surface geology or geophysical information. The geological or geophysical map may, or may not, accurately define the limits of the pool, but it does give sufficient information on which to initiate a drilling program. Wells are drilled at points selected with the aid of surface geology or geophysical data. As drilling proceeds, sub-surface data are accumulated which can be used as a basis for an intelligent development program.

The primary objects of the first wells are to define the limits of the pool accurately, and determine the characteristics of the producing formation. A sufficient number of wells must be drilled to establish the following:

I. Characteristics of reservoir.
   a. Area, position, and thickness of producing zone.
   b. Geologic structure of the producing zone.
   c. Porosity, permeability, and degree of oil saturation.
   d. Position and area of oil-saturated part and position of gas-saturated part of the reservoir.
   e. Position and level of top, edge, and bottom water.
   f. Pressure and temperature of the reservoir.
   g. Characteristics of oil and gas.
      1. Volume of gas dissolved in oil.
      2 Gravity, viscosity, etc.
      3 Analysis of oil and gas.

II. Characteristics of underground water.
   a. Chemical analysis of top, edge, and bottom water.

From the first wells sufficient information will be available to determine the correct well-spacing program for securing the maximum ultimate recovery of oil commensurate with accepted standards of efficiency and economy. The position of the various land lines which demarcate surface ownerships should have no bearing on the spacing of the wells. Under the proposed plan, wells will be drilled with a close spacing in parts of the pool, while in other parts the well spacing may be very wide. The rate of development should depend somewhat on the proposed rate of withdrawal. In the initial stages of the development of the pool no pronounced withdrawal should be started until the relative content values are established, and until withdrawals can be made at the most advantageous points in the field.

(*Continued on page* 48)

Completing Large Sand Wells In Oklahoma City

By FLOYD SWINDELL
Staff Representative

SUCCESSFUL completion of large sand wells in the Oklahoma City pool is dependent upon two principal factors. First, the equipment must be designed to withstand the cutting action of sharp sand blown from the well with large volumes of high-pressure gas and oil. The second and an equally important requirement, is that the crew fully understand the limits to which equipment can be exposed and be thoroughly trained in the procedure of handling wells of this calibre. Much has been written on equipment in use by various operators, but so far as is known, no one has recorded the exact procedure followed by the completion crew. Believing that a record of this kind has practical value and is interesting, a large sand producing well has been selected and the completion details presented herein. The method used on this well is representative of the practice of only one operator and differs in many respects from that followed by others. However, since it has been used on a large number of wells, it can be accepted as a successful method for overcoming the many difficulties that present themselves when completing in the Wilcox sand or any other formation where conditions are similar.

"Successful completion," is a relative term as used herein. Practically all of the big sand producers give trouble at one time or another and it may be said that a well is successfully completed if its initial production is as good as that of offsets and it does not cut out connections beyond the point of control. Other methods have reduced the cutting action of sand to a greater extent but apparently in so doing have reduced initial flow. As allowable produc-

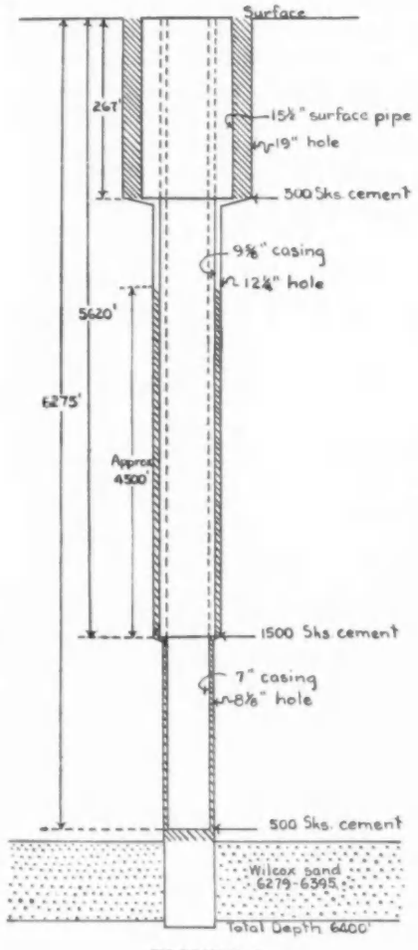


FIGURE 1

Showing size of hole, casing and cementing record, an annular space filled with cement. Shaded area represents space filled with cement

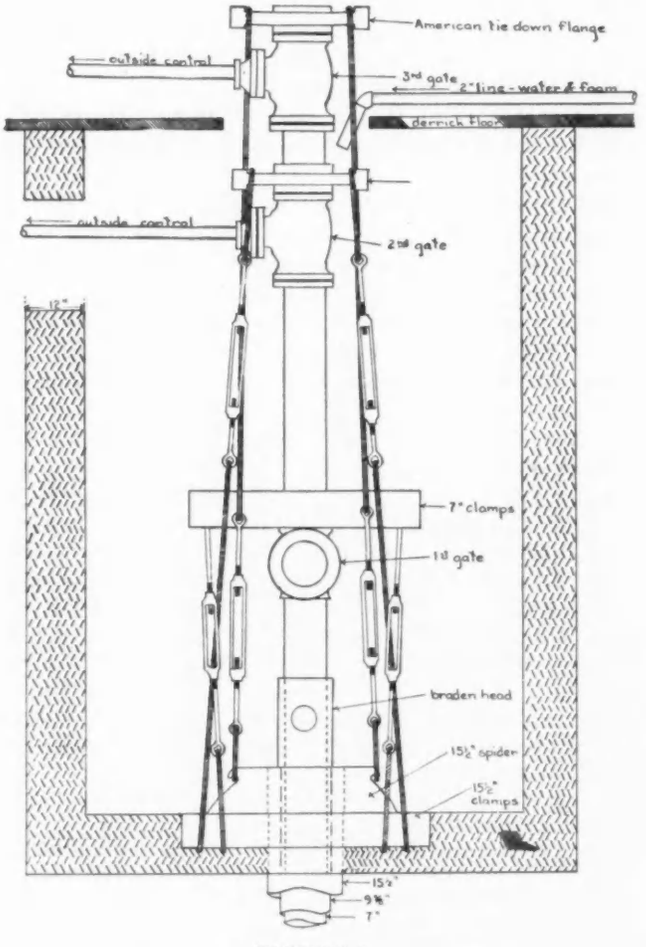


FIGURE 2

Cross-section of cellar and connections below the derrick floor. First and second gates can be sprayed with foam through two-inch line at derrick floor and cellar can be flooded with water in case of fire

tion is based on a percentage of potential and this in turn is based on the first eight-hour gauge, it is advantageous to have a well completed in a manner which will permit maximum yield during as much of the eight-hour period as is possible.

Phillips Petroleum Company's Sam 1, N½ SE SE NE Section 3-11n-3w, in the northern portion of the pool, has been selected because it penetrated a representative thickness of Wilcox sand, produced more than 100,000,000 cubic feet of high-pressure gas along with approximately 2000 barrels of oil per hour, and blew sand at the rate of more than 600 barrels per hour during the first flow period.

Well Record

Completed: May 23, 1931—24-hour potential: 38,722 bbls.
Wilcox sand: 6279 to 6395 feet—Depth: 6400 feet.
Casing and cementing record:
267 feet, 15½-inch with 300 sacks.
5620 feet, 9⅝-inch with 1500 sacks.
6275 feet, seven-inch O. D. with 500 sacks
Record of flow periods:

First flow—4299 barrels oil, 1271 barrels sand, 97.4 million gas—two hours 15 minutes.

Second flow—4292 barrels oil, no record on sand, 95.6 million gas—two hours 10 minutes.

Third flow—4185 barrels oil, no record on sand, 108 million gas—three hours 30 minutes.

First flow—used 4½-inch choke, 400 pound back pressure.
Second flow—4½-inch choke, 450 pound back pressure.
Third flow—3½-inch choke, 775 pound back pressure.
100 pounds back pressure carried on separators.

Other wells in the vicinity have yielded larger amounts of oil and gas but the records do not disclose any that has had a larger initial sand volume. It will be noted from the above tabulation that with the change from a 4½ inch choke during the first flow to a 3½ inch choke during the third, production of oil declined while the gas volume was materially increased. An attempt was made to bring the well in using only one separator. It was so badly overloaded that a second was installed. During the second period the flow line was cut out in two hours and 10 minutes and during the third in 3½ hours. No record was kept on

FIGURE 3

Connections above the floor. Notice rigid tie down scheme and home fabricated horses for working platform

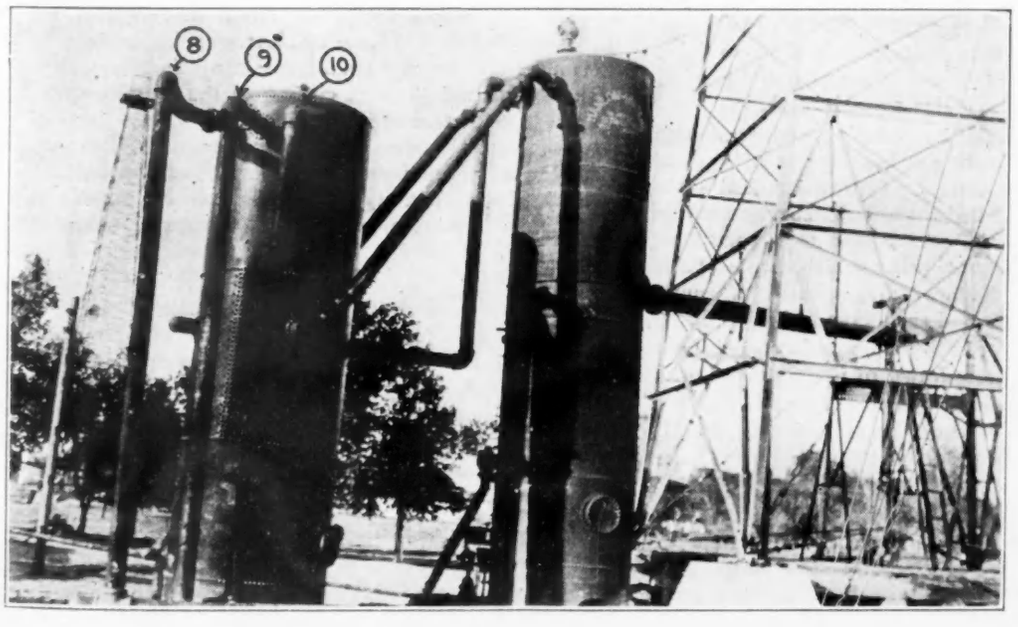


FIGURE 4

Separator installation. Lines 8, 9 and 10 are gas vents and go to the risers

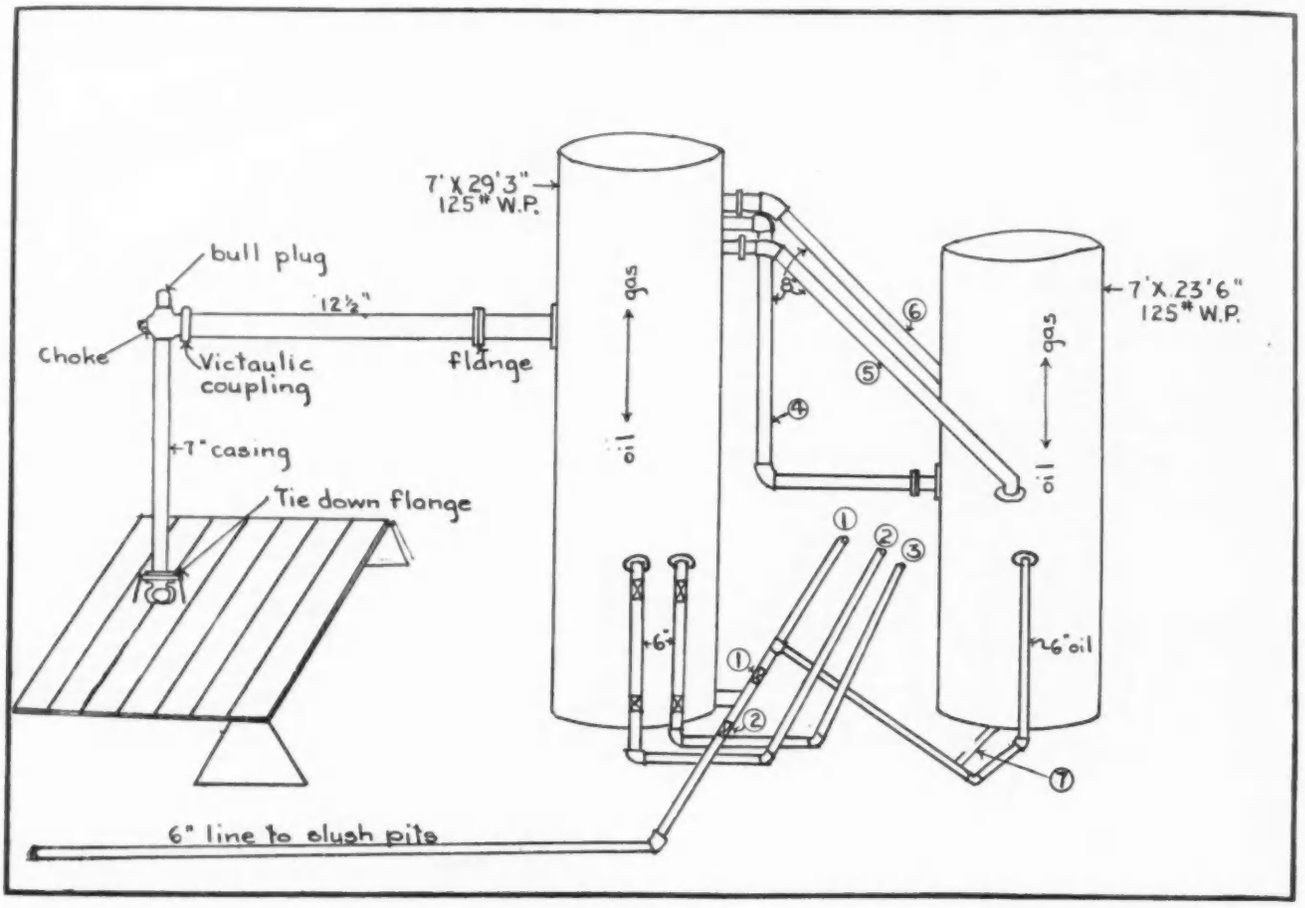


FIGURE 5
Showing flow lines to and from the separators

the volume of sand during the last periods, but the well was making only a small amount of sand at the end of the potential gauge.

Casing

Completion procedure depends to some extent on the casing program. Some operators have set the oil string below the top of the Wilcox sand and have shut off part of the gas while others set several feet above the sand and take advantage of all gas. Still others set on top of the sand. Phillips Petroleum Company has set nine-inch casing on top of the sand in four of its wells and by so doing apparently has succeeded in obtaining larger initial production than offset wells through this procedure alone.

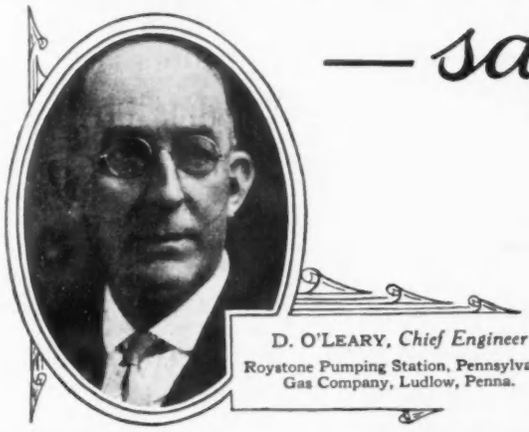
Figure 1 shows size of the hole, casing and cementing program, and the approximate number of feet of annular space filled with cement in Sam 1. Fifteen hundred sacks behind the 9⅝ inch casing filled the annular space to within approximately 750 feet of the surface and to a point well above the Tonkawa and Layton series which contain large volumes of gas. Figure 2 shows arrangement of equipment below the derrick floor and the method of tying down. In order to avoid confusion, all the lines have not been shown, the figure having been drawn to illustrate the principle. The three 5000-pound test, 3000-pound working pressure master gates are used on the seven-inch casing as required by regulation. Phillips Petroleum Company used steel cable and turnbuckle rods for tying down in preference to the solid turnbuckle rod used by a large number of other operators. This is done in the belief that the tie down lines are less likely to break if they are permitted a small amount of stretch when the well is blowing large amounts of mud, sand, and water. Good portions of used drilling line are utilized.

The cellar is built in the shape of a cylinder about 10 feet in diameter and 15 feet deep with reinforced concrete walls 12 inches thick. A concrete stairway leads from the outside of the derrick, permitting hasty exit if necessary. When the 15½ inch surface string has been set, cement is run flush with the top of the 15½ inch clamps as shown in Figure 2. The nine-inch casing is hung in a 15½ inch spider while being cemented. After encountering top of the Wilcox sand, a column of clear water is exchanged for the mud fluid thereby eliminating the difficulty which has been experienced through cutting of the mud by gas. Exchange is made through the drill pipe. At this depth (6279 feet) the water column exerts a minimum pressure of 2725 pounds per square inch at the bottom of the hole. This gives a margin of safety of not less than 200 pounds in excess of the formation pressure as indicated by readings at the surface.

Procedure

When the desired thickness of Wilcox sand has been drilled, the drill pipe is laid down and while waiting on cement to set on the oil string (seven inch O.D.) all rubbish is moved, connections made up, and separators installed. Special attention is given the anchoring of all equipment. Figure 3 shows connections above the derrick floor. Tie lines running to the top of the Christmas tree are anchored to the 15½ inch clamps in the cellar floor. These lines were omitted in Figure 2 to avoid confusion. Note that the casing is tied to the derrick legs with two sets of lines and turnbuckle rods and the upper end is also tied to the primary separator. This makes a practically

"A REMARKABLE RECORD"
—says Dan O'Leary



D. O'LEARY, *Chief Engineer*
Roystone Pumping Station, Pennsylvania Gas Company, Ludlow, Penna.

"THIS valve has been in continuous service since we received it three years ago and up to now has never had any replacing or repairing done on it.

"This is certainly a remarkable record for a compressor valve."

TRANSIT COMPRESSOR VALVE

THE illustration at the right shows the TRANSIT Ring Plate Gas Compressor valve disassembled after three years of operation.

Both valve plates and seats show some wear. The seats were purposely made very narrow, their width being easily seen in the illustration. Wear on the valve guides is very slight, not more than 004" or 005" on diameter

Valve plates were in constant slow rotation. This is proved by the high polish on the back of the valve plates, where the buttons rested. The spring buttons themselves were somewhat reduced in diameter, and they also showed wear where they came in contact with the valve guard.

Eleven of the eighteen springs showed no perceptible wear The other seven showed wear, and had lost a coil or two. All springs, however, were sufficiently strong to exert force on the valve plates. In other words the valve was functioning perfectly when removed.

From appearances, we believe the valve would have operated for at least another year.

We manufacture a complete line of gas engine gas compressors. Of course, all are equipped with these new type valves.

We will also equip new or used compressors of any make with valve service of this type.

(From An Unretouched Photograph)

REFINERY PUMPS FOR HOT OIL *and every other refinery service*
TRANSIT (CURTIS) ROTARY PUMPS
PIPE LINE PUMPS

BEAUMONT, TEXAS — E. L. Wilson Hardware Company
SALT LAKE CITY, UTAH — F. C. Richmond Machinery Co.

NATIONAL TRANSIT PUMP & MACHINE CO. OIL CITY, PA.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA NEW ORLEANS

PHOENIX, ARIZ. — Pratt-Gilbert Co.
LOS ANGELES — Republic Supply Company of California
ST. LOUIS, MO. — Reeves & Skinner Machinery Co.

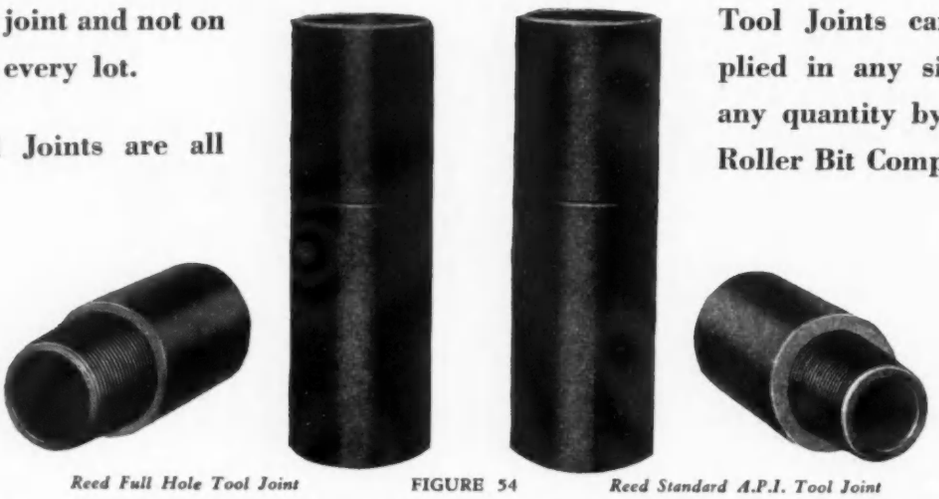
FIELD PUMPS · TOOLS *for Pipe Line Construction*
GAS ENGINES
GAS ENGINE GAS COMPRESSORS

19.1 SQ. IN. VS. 9.6 SQ. IN.

That's the whole reason for the increasingly large use of Reed Full Hole Tool Joints by operators in fields everywhere desirous of reducing drilling costs. A greater slush volume is delivered at the bottom of the hole with almost friction-less effort and with a consequent large saving in power costs, pump valve re-placements, liners, rods, packings, fittings, hose, etc.

Reed Tool Joint forgings are press forged from billet steel of correct analysis under controlled temperature. These forgings are normalized and annealed in auto-matically controlled heat furnaces before being rough turned. Imperfect forgings disclosed by rough turning are rejected and only perfect joints are carried into final manufacture. The processes of fac-ing, boring to size, tapering pins and boxes, checking for alignment, thread-ing, etc. are carefully and painstakingly checked and rechecked on every half of every tool joint and not on one from every lot.

Reed Tool Joints are all heat treated in an electric automatically controlled furnace where maximum hard toughness of grain structure is obtained without brittleness. As a further and final check all joints are again rechecked and refitted to a smaller tolerance than in use by most tool joint manufacturers. All sizes of Reed Tool Joints are made from high quality chrome nickel steel except sizes 5-9/16″ and larger A.P.I. Tool Joints, which are made from selected manganese carbon steel, unless chrome nickel steel is specified. Either Reed Full Hole or A.P.I. Tool Joints can be sup-plied in any size and in any quantity by the Reed Roller Bit Company.



Reed Full Hole Tool Joint **FIGURE 54** *Reed Standard A.P.I. Tool Joint*

Dimensions of Reed Full Hole Tool Joints (Shown in the table below in Bold Face type) as compared with dimensions of Reed Standard A. P. I. Tool Joints (Shown in the table below in light face type).

Type of Tool Joint	Size of Tool Joint	Outside Diameter Tool Joint	Inside Diameter Pin-End	Area of hole in Pin-End Sq. In.	Length	Size of Tool Joint	Type of Tool Joint
Reed Full Hole	3½″	**4½″**	**2-29/64″**	**4.7**	18″	3½″	**Reed Full Hole**
Reed A.P.I.		4½″	1½″	1.7			Reed A.P.I
Reed Full Hole	4½″	**5¾″**	**3-5/32″**	**7.8**	20″	4½″	**Reed Full Hole**
Reed A.P.I.		5½-5¾″	2¼″	3.9			Reed A.P.I
Reed Full Hole	5-9/16″	**6¾″**	**4⅛″**	**13.4**	22″	5-9/16″	**Reed Full Hole**
Reed A.P.I.		6¾″	2¾″	5.9			Reed A.P.I
Reed Full Hole	6⅝″	**7¾″**	**4-15/16″**	**19.1**	24″	6⅝″	**Reed Full Hole**
Reed A.P.I.		7¾″	3½″	9.6			Reed A.P.I.

REED FULL HOLE TOOL JOINT

Area—19.1 sq. in.

This is the **actual** area of the opening through the pin end of a Reed Full Hole Tool Joint, 6⅝" size.

Note full opening for passage of slush.

A. P. I. TOOL JOINT

Area—9.6 sq. in.

This is the **actual** area of the opening through the pin end of a standard A. P. I. Tool Joint—6⅝" size.

Compare with large area shown in the cut above, of the Reed Full Hole Tool Joint.

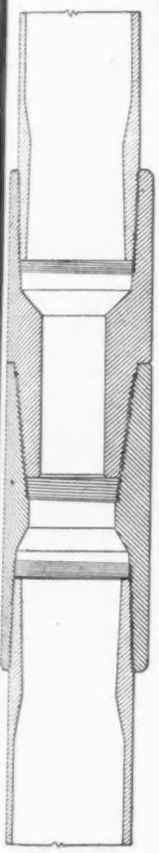


FIGURE 56

A.P.I. Tool Joint in regular internal upset Drill Pipe

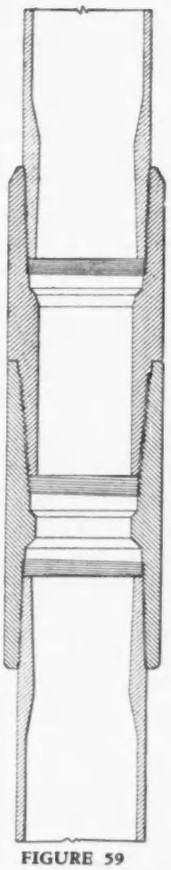


FIGURE 59

Reed Full Hole Tool Joint on regular internal upset Drill Pipe, allowing full unrestricted passage of slush equal to that of the internal upset of the Drill Pipe

Distributors of

MARTIN-DECKER PRODUCTS

in the Gulf Coast and Mid-Continent

REED ROLLER BIT CO.

HOUSTON LOS ANGELES OKLAHOMA CITY NEW YORK CITY

rigid flow connection but permits a small amount of vibration through stretch of the steel lines.

Figures 4 and 5 show opposite sides of the separator installation, and Figure 6 the settling tank which is set about 150 feet from the derrick floor and alongside the working storage tanks. Many of the wells completed in this manner do not build up a pressure sufficient to overcome hydrostatic pressure of the water column and have to be bailed. This is done by removing the upper bull plug. In the case of the well under discussion, bailing was not necessary.

The first step in completion is the arrangement of all valves. Valve 1 (Figure 5) is closed and Valve 2 on the slush pit line is open. Oil lines 1, 2 and 3 to the settling tank are closed and gas lines 4, 5 and 6 are open. The master gates are opened simultaneously so that the well may kick off under its own pressure if possible and eliminate bailing. Each of the three eight-inch separator vent lines has a pressure control valve which requires the attention of one or more men. When the master gates have been opened, mud, water, and such gas as is not separated, pass through a line at the bottom of the primary or grief separator and out to the slush pits. When clean oil begins showing, the oil lines are opened and Valve 2 closed, directing the flow to the settling tank. One engineer controls back pressure on the separators and one is stationed at Valve 2. As sand fills the first separator Valve 2 is cracked forcing sand and oil out through the bottom line. This operation is repeated as often as necessary. Line 7 discharges all sand which may go over throug. the gas lines.

Settling Tank Equipment

The settling tank is equipped with a 12½ inch sand discharge line which runs to the sand pit approximately 100 yards away. This line exits from the bottom of the tank and is tapped with two water lines, one of which forces sand to the pit and the other clears the tank bottom and keeps the discharge line open. Because of the close cut off made when oil starts showing in the stream, it is usually necessary chemically to treat the first tank of oil before it is ready for the pipe line. Figure 6 shows arrangement of the settling tank. Oil enters the tank through lines 1, 2 and 3, and is withdrawn through two lines which are welded into the flume on the opposite side from point of entry. By this arrangement oil may be withdrawn while the well is still producing without gas choking the lines and the outlet points are located so that oil has had a chance to settle before it goes to working storage.

Although the method described is practically a direct opposite from that used by a large number of operators, completion of a well which produces as did the Sam 1 is a good recommendation for it. Larger volumes of gas and oil are encountered elsewhere but it is doubtful that many completions will encounter a more severe sand condition.

One further progressive step made by the production department of Phillips Petroleum Company since completion of the Sam 1, is the placing of two Victaulic couplings on the 12½ inch flow line, thereby eliminating the flange connection. It is usually one of these connections that shows sand cutting first. When this difficulty is observed the couplings are quickly removed, a new flow line installed, and the well is ready to continue production within a few minutes.

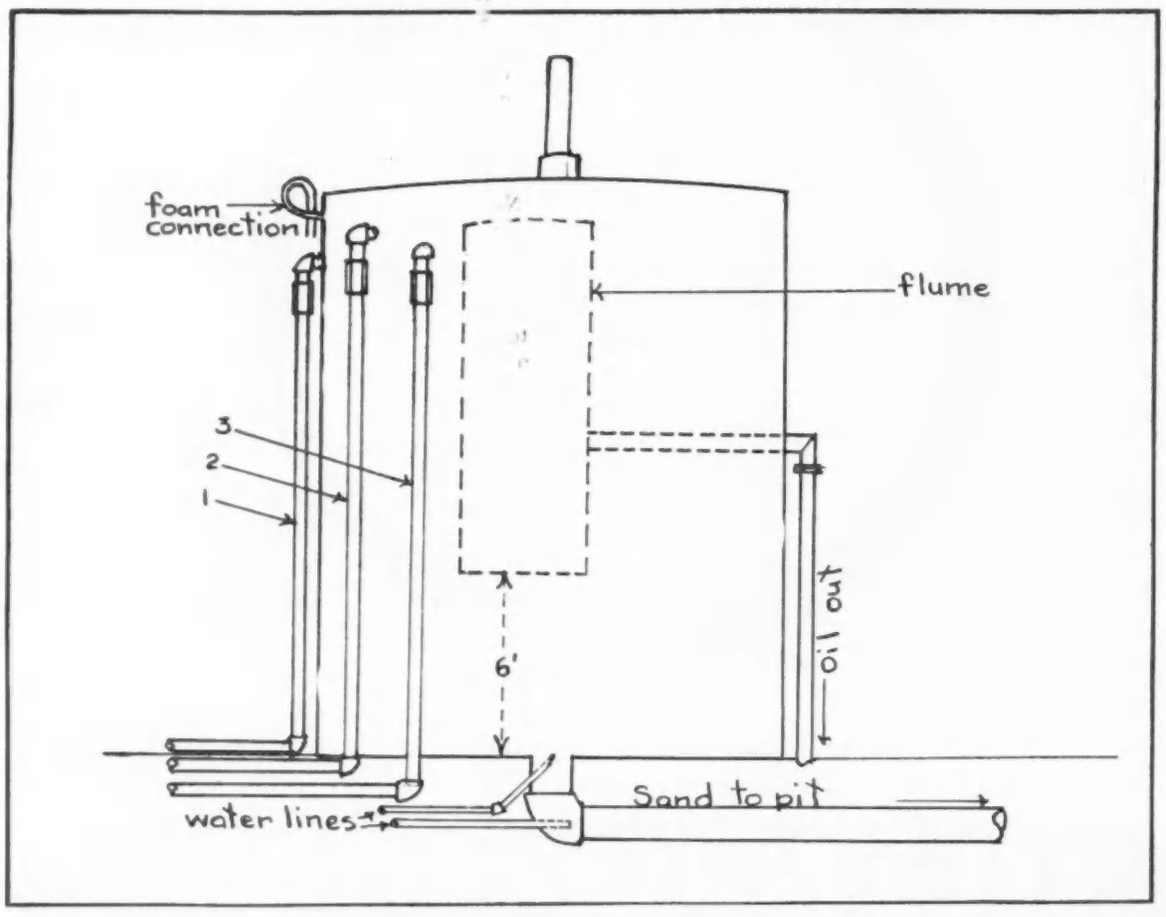


FIGURE 6

Arrangement of settling tank. Water lines at the bottom connection are used to wash sand to the pits and clear tank bottom

Markets • Production • Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Oklahoma and Texas Boost Output 25,000 Barrels

An increase of 25,550 barrels in daily average production of the United States last week was due to a gain in Oklahoma's output of 15,800 barrels and a gain of 10,650 barrels in Texas. This brought the production curve up to 2,456,800 barrels, or 77,800 barrels above the economic limit proposed by the oil states advisory committee. Increases were also recorded last week by Kansas, 3500 barrels; Louisiana, 750 barrels, but these were offset by decreases in California, 800 barrels; Mountain States, 1150 barrels; Eastern States, 3200 barrels.

A factor that is assuming increasing importance with each week is a persistent addition to storage in Oklahoma. Despite the fact that production of that state has been well below the allowable of 545,000 barrels, stocks of crude are steadily increasing. Last week, reports show that Oklahoma crude stocks increased at the rate of about 34,000 barrels a day. During the preceding week additions to storage amounted to about 22,000 barrels a day; the week prior to that crude was withdrawn from storage at the rate of 23,000 barrels a day. One way to interpret this trend is that it reflects the inroads being made upon the Oklahoma crude market by East Texas oil. It is apparent, therefore, that the present allowable output of Oklahoma is too high. Thus, while the market demand for crude in Oklahoma may indicate a daily average of 545,000 barrels, it is necessary to consider what practically amounts to an importation of oil going into Oklahoma's market channels and produced elsewhere.

If stocks are being increased in Oklahoma at the rate of 34,000 barrels a day, it means that the allowable must be reduced back to about 511,000 barrels, or less, in order to gauge the true status of production there. Measuring actual production against the present allowable figure would indicate that stocks are being drawn upon to the extent of 10,150 barrels, whereas they are actually being increased at the rate of 34,000 barrels a day.

Texas production crossed 1,000,000 barrels a day last week, rising to a total daily average of 1,004,350 barrels. Compared with the allowable of 900,000 barrels, this represents an indicated excess output of 104,350 barrels. East Texas production was recorded by the American Petroleum Institute at a daily average of 419,450 barrels. Actual production of the field, following the new limitation order of Governor Sterling, has again been reduced to about 370,000 barrels a day. On this basis, Texas production amounts to about 954,900 barrels daily, or about 55,000 barrels above the economic limit. Well completions in East Texas last week numbered 128, of which 127 were producers, credited with a potential output of 1,068,600 barrels. On the new allowable basis, these wells call for a legal increase in output of 15,875 barrels a day. That drilling in East Texas will continue to be maintained at a high rate is indicated by the report of drilling permits for last week. Permits granted in Texas numbered 256 last week, against 150 in the preceding week, an increase of 106.

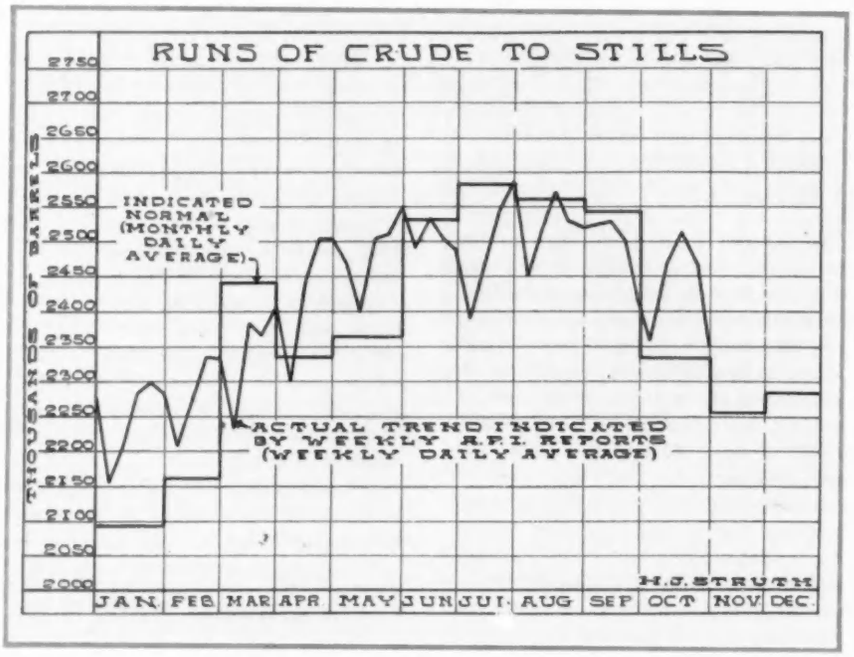
Despite the continued high rate of drilling in East Texas, the outlook for the immediate future seems to warrant continued optimism. The power of the state to regulate production has been clearly demonstrated and there is every reason to believe that it will continue to remain an all-important factor in the prevention of over-production. As long as East Texas production can be prevented from greatly exceeding 400,000 barrels a day, the industry as a whole can face the immediate future with confidence. It is seen, however, that some revision in the national allowable output is necessary, particularly in Oklahoma, where the storage figures indicate a somewhat excessive allowable. Previous studies of market requirements made by THE OIL WEEKLY have placed the industry's economic crude production limit for this year at 2,343,000 barrels daily. The figures at hand would seem to justify that limit as adequate in view of actual results shown by the production situation in East Texas.

Crude Runs to Stills Now Exceed Normal Eight Per Cent

efinery runs to stills have been reduced to a daily average of about 2,363,000 barrels, but supply and demand facts indicate this rate to be about eight per cent too high. Last week, refineries reporting to the American Petroleum Institute indicated practically little change in crude throughput. Reported runs amounted to 2,294,000 barrels, against 2,286,000 barrels in the preceding week. Compared with previous weeks, however, this represented a considerable decline. Nevertheless, the facts show that runs during November and December should not exceed 2,175,000 barrels a day, whereas the foregoing figures indicate a total throughput (Bureau of Mines basis) of 2,363,000 barrels. This means that refiners must reduce operations immediately to the extent of eight per cent, if they expect to realize the degree of market improvement necessary to sustain higher crude prices.

Stocks of gasoline have shown a steady upward trend during the past four weeks, having mounted during that period by a total of nearly 2,000,000 barrels. Gasoline stocks were reported last week at 32,701,000 barrels, which included 580,000 barrels that had not previously been reported. Thus, instead of a reported increase of stocks last week of 1,256,000 barrels, there was only an actual increase of 676,000 barrels. Each week's increase in gasoline stocks makes it appear more difficult for the industry to attempt to cut back refinery production to the point necessary to attain the storage goal set for the end of the year. Seven weeks remain in this year in which refiners will be able to make a final showing. If still runs are immediately reduced to the extent of eight per cent, there will follow a withdrawal from gasoline storage instead of a persistent gain. While it may be too late to attain the goal set for the close of this year, it is not too late for refiners to attempt to offset the excesses of recent weeks that have shown up in the comparative gasoline supply figures. While this has always been the time of year when increased gasoline stocks have been anticipated, it would not be out of line now to cause withdrawals from storage. An eight per cent reduction in still runs will accomplish it.

MARKET SECTION



California Oil Industry Seems to Be on Up-Grade

After several false starts, the oil industry in California seems to be on the up-grade. Just what percentage of the rumored improvement is a reality, is difficult to determine, while it is equally as difficult to forecast a continued climb from the present level.

First of all, the current crude supply is being handled without the surplus which has played havoc for more than two years. The major purchasing companies are gradually absorbing all production, due to the approach of the actual output to the allowable. This takes up all of the "free" crude which has been circulating around and falling into the hands of whoever would take it.

A survey of the leading fields shows the potential falling gradually, except at Kettleman Hills. Most of the shut-in production of light oil is in this field; and it really has a very impressive potential. Some of the other fields, such as Long Beach, Santa Fe Springs and a few others, are past the danger stage. The potential of Santa Fe Springs and Long Beach must be considerably below the average

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending October 31, 1931

(Figures in barrels of 42 gallons)

District	Potential Capacity (Daily) Total	Potential Capacity (Daily) Reporting	Potential Capacity (Daily) Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per c't Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	633,700	100.0	3,337,000	476,700	75.2	3,931,000	10,223,000
Appalachian	149,600	137,400	91.8	702,000	100,300	73.0	1,343,000	1,654,000
Indiana, Illinois, Kentucky	436,300	431,500	98.9	2,235,000	319,300	74.0	3,208,000	5,519,000
Oklahoma, Kansas, Missouri	485,700	435,200	89.6	1,747,000	249,600	57.4	2,843,000	5,095,000
Texas	838,200	765,400	91.3	3,943,000	563,300	73.6	5,676,000	11,688,000
Louisiana-Arkansas	233,100	230,500	98.9	981,000	140,100	60.8	779,000	3,807,000
Rocky Mountain	160,900	143,800	89.4	236,000	33,700	23.4	1,251,000	826,000
California	914,500	888,100	97.1	3,167,000	452,400	50.9	*12,414,000	96,895,000
Total week Oct. 31	3,852,000	3,665,600	95.2	16,348,000	2,335,400	63.7	31,445,000	135,707,000
Total week Oct. 24	3,852,000	3,665,600	95.2	16,796,000	2,399,400	65.5	31,218,000	135,431,000
Total Nov. 1, 1930	3,730,100	3,566,400	95.6	15,971,000	2,281,600	64.0	(a)35,571,000	139,626,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	3,087,000	441,000	83.0	4,380,000	8,362,000
Louisiana Gulf Coast	147,500	147,500	100.0	647,000	92,400	62.6	665,000	2,938,000

Note: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

(a) Revised in Indiana-Illinois district, due to transfer to "Bulk Terminals" of stocks previously reported as "At Refineries."

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Fourth Quarter 1931	Economic Limit Fourth Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since January 1†
Arkansas	56,000	50,000	37,750	—12,250	44,132	—10,268
California	500,000	487,500*	496,100	+8,600	522,109	+28,609
Kansas	113,000	110,000	106,450	—3,550	106,439	—5,561
Louisiana	75,000	60,000	61,500	+1,500	62,954	—7,546
Oklahoma	525,000	545,000*	534,850	—10,150	466,900	—49,600
Texas	860,000	900,000*	1,004,350	+104,350	896,164	137,464
Balance of U. S.	214,000	210,000	215,800	+5,800	208,072	—25,703
Totals	2,343,000	2,362,500	2,456,800	+94,300	2,306,770	67,395

*Allowable.
†Excess based on allowable to date.

on which the allowables are based. Corrections have been made during the past two months, but the state total seems still too high.

Higher crude prices now might do as much harm as good. Low crude prices did more to reduce the output than any one thing, and higher prices might prove misleading. Operators are anxious for an improvement; and a boost might create the wrong impression. California and Mid-Continent prices are fairly well balanced.

Field work has dropped to a ridiculously low level; but an increase in development should take place soon after the first of the next year. Over-production and low prices finally put an end to intensive development, even if at too late a period to prevent a depression. Fewer wells will have been drilled in 1931 than any previous year since the World War. As soon as the demand for crude is felt, more work will start.

Cracked Gasoline Production

Week Ending October 31, 1931

(Barrels of 42 gallons)

	Potential Charging Capacity Total	Daily Reporting	%	Production Total	Daily Average
East Coast	261,300	236,300	94.0	645,000	92,100
Appalachian	56,300	54,100	96.1	181,000	25,900
Ind., Ill., Ky.	330,400	315,400	95.5	618,000	88,300
Okla., Kans., Mo.	237,800	219,500	92.3	417,000	59,600
Texas	450,800	436,200	96.8	986,000	140,800
Louisiana-Arkansas	112,400	112,400	100.0	282,000	40,300
Rocky Mountain	99,900	98,400	98.5	94,000	13,400
California	190,800	190,800	100.0	294,000	42,000
Total week Oct. 31	1,739,700	1,663,100	95.6	3,517,000	502,400
Total week Oct. 24	1,739,700	1,663,100	95.6	3,422,000	488,800
Total Nov. 1, 1930.	1,589,200	1,341,300	84.4	2,652,000	378,900

The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.

Texas Gulf Coast	352,400	347,400	98.6	786,000	112,300
Louisiana Gulf Coast	77,000	77,000	100.0	216,000	30,900

Imports of Petroleum

(Barrels of 42 gallons)

AT ATLANTIC COAST PORTS	Week Ended October 31	Week Ended October 24
Baltimore	423,000	133,000
Boston	200,000	.....
New York	857,000	492,000
Philadelphia	148,000	189,000
Others	243,000	(a) 330,000
Total	1,871,000	(a) 1,144,000
Daily Average	267,285	163,429
AT GULF COAST PORTS		
Galveston District	64,000	60,000
New Orleans & Baton Rouge	51,000	.....
Port Arthur & Sabine District	.....	.....
Tampa	.....	.....
Total	115,000	60,000
Daily Average	16,429	8,571
AT ALL UNITED STATES PORTS		
Total	1,986,000	1,204,000
Daily Average	283,714	172,000
Daily Average Four Weeks Ended	241,357	213,821
Distribution of Total Imports Is As Follows:		
Crude	808,000	700,000
Gasoline	271,000	(a) 211,000
Gas Oil	.....	11,000
Fuel Oil	907,000	282,000
Total	1,986,000	(a) 1,204,000

(a)—Revised.

Receipts of California Oil

(Barrels of 42 gallons)

AT ATLANTIC COAST PORTS	Week Ended October 31	Week Ended October 24
Baltimore	.....	.....
Boston	.....	.....
New York	97,000	22,000
Philadelphia	.....	118,000
Others	.....	.....
Total	97,000	140,000
Daily Average	13,857	20,000
AT GULF COAST PORTS		
Total	.....	6,000
Daily Average	.....	857
AT ATLANTIC AND GULF COAST PORTS		
Total	97,000	146,000
Daily Average	13,857	20,857
Daily Average Four Weeks Ended	40,214	50,643
Distribution of Total Receipts of California Oil Is As Follows:		
ATLANTIC COAST PORTS		
Gasoline	97,000	140,000
Total	97,000	140,000
AT GULF COAST PORTS		
Gasoline	.....	6,000
Total	.....	6,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	561,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July	527,950	100,000	912,250	157,850	33,650	41,400	107,600	94,400	517,900	2,493,000	77,282,700
August	306,150	101,900	976,800	153,550	30,400	37,650	109,600	92,900	510,900	2,319,050	71,890,200
September	261,050	104,600	752,250	149,950	29,600	38,000	117,400	92,250	505,550	2,050,650	61,518,950
Oct. 3	273,500	107,250	836,450	150,750	29,200	37,600	123,600	91,400	497,700	2,147,450	15,032,150
October 10	251,550	107,600	865,200	151,200	28,900	37,500	121,400	92,950	505,500	2,162,700	15,138,900
October 17	505,600	101,900	886,650	154,400	29,500	37,950	120,300	93,300	507,400	2,437,000	17,059,000
Oct. 24	482,500	101,900	854,650	152,350	29,500	37,950	119,050	95,250	508,100	2,381,250	16,668,750
October 31	519,050	102,950	869,300	156,250	28,900	37,750	124,800	95,350	496,900	2,431,250	17,018,750
Nov. 7	534,850	106,450	878,000	158,800	29,050	37,750	121,600	94,200	496,100	2,456,800	17,197,600
Increase	15,800	3,500	8,700	2,550	150	.....	.....	.....	.....	25,550	178,850
Decrease	.....	.....	.....	.....	.....	.....	3,200	1,150	800	.....	.....

Last Week's Daily Average Production by Districts

TEXAS	Nov. 7	Oct. 31
Panhandle	67,450	64,700
North Texas	57,450	57,450
West Central Texas	26,600	27,150
West Texas	194,750	191,800
East Central Texas	55,900	56,450
East Texas	419,450	417,700
Southwest Texas	56,400	54,050
Texas Gulf Coast	126,350	124,400
Total Texas	1,004,350	993,700
OKLAHOMA	534,850	519,050
CALIFORNIA	496,100	496,900
KANSAS	106,450	102,950

LOUISIANA	Nov. 7	Oct. 31
North Louisiana	29,050	28,900
Louisiana Gulf Coast	32,450	31,850
Total Louisiana	61,500	60,750
ARKANSAS	37,750	37,750
MOUNTAIN STATES		
Wyoming	38,450	38,850
Montana	7,500	8,050
Colorado	4,300	4,250
New Mexico	43,950	44,200
Total Mountain States	94,200	95,350
EASTERN STATES	121,600	124,800
TOTAL UNITED STATES	2,456,800	2,431,250

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	1	1	1	0	0	0	0	1	50	0
California	5	4	3	4	0	0	2	0	2,225	7,150
Illinois	0	2	0	1	0	0	0	1	0	2
Indiana	0	3	0	0	0	0	0	3	0	0
Kansas	8	7	5	3	1	2	2	2	4,415	1,270
Kentucky	7	3	5	3	2	0	0	0	250	120
Louisiana	3	9	0	7	2	0	1	2	0	4,850
Michigan	5	2	0	2	1	0	4	0	0	3,400
Mississippi	0	3	0	0	0	2	0	1	0	0
New Mexico	0	1	0	0	0	0	0	1	0	0
New York	0	2	0	0	0	2	0	0	0	0
Ohio	32	22	6	3	21	14	5	5	81	60
Oklahoma	9	14	6	6	1	1	2	7	16,125	58,990
Pennsylvania	0	0	0	0	0	0	0	0	0	0
Texas	179	183	148	175	6	0	25	8	1,074,635	1,421,859
West Virginia	0	9	0	1	0	7	0	1	0	3
Totals	249	265	174	205	34	28	41	32	1,097,781	1,497,704
Increase	..		..		6		9		.....	
Decrease	16		31		..		..		399,923	

Comparison of Permits Granted for New Wells

State—	For Week Ending Nov. 7	Previous Week	This Week 1930	Total This Month	This Month 1930	Total this Year	Total This Date Last Year	1930 Year Total
Arkansas	2	0	5	2	9	31	97	108
California	8	6	24	8	82	319	812	922
Louisiana	4	3	15	4	55	277	869	948
Kansas	4	12	19	4	59	390	871	944
Oklahoma	15	14	47	15	160	719	2,602	2,830
Texas	256	150	67	256	412	5,844	6,449	7,052
Total	289	185	177	289	777	7,580	11,700	12,804

MARKET SECTION

Oklahoma City Field Now Is Prorated According to Zones

Oklahoma City.—Under a new proration order, issued by the Oklahoma Corporation Commission November 7, the Oklahoma City field was divided into zones and the allowable output changed with regard to the water encroachment of two of these zones. Total output, however, will remain at 180,000 barrels daily, the figure set in the last order of October 31. The zone order was made retroactive to November and will remain enforce until January 1, 1932.

The zones are defined in accordance with formations and geological conditions within the field. The petition to have proration in the field changed to this basis was introduced by Wirt Franklin in behalf of the committee of operators in the field. The purpose was to allow producers to handle wells making water, to better advantage. The order further stated that there was danger of water encroachment into the Wilcox sand unless provisions were made to combat this possibility.

The four zones as defined in the order are the Wilcox sand, the Simpson below the Wilcox, the Siliceous lime, and the area east of the fault line in the field.

Whereas the order of October 31 set 5.4 per cent of potential as the output of all wells, the order of November 7 set 4.5 per cent of potential as the output of all wells.

In addition to the 4.5 per cent, wells in the Siliceous lime will be allowed to produce 250 barrels daily. Simpson sand wells which do not have potential in excess of 2000 barrels and which have water content of three per cent or more, will be allowed to produce 200 barrels daily in excess of the 4.5 per cent allowed all wells. Simpson sand wells, which now have potential greater than 2000 barrels and water of less than three per cent will be allowed to take the 200 barrels additional at any time during the period that these conditions come about.

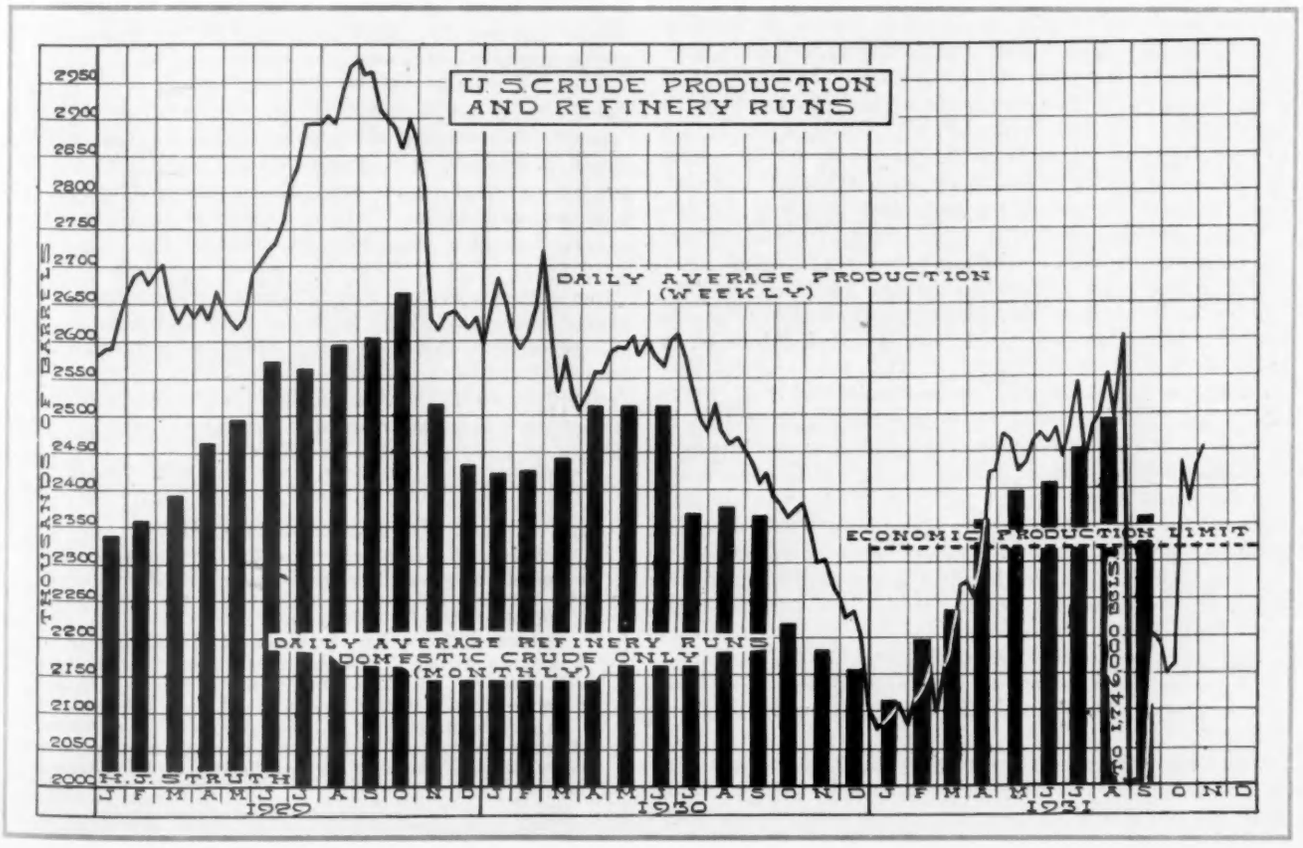
Refiners Raising Gasoline Price After Crude Advance in Texas

Fort Worth.—Wide range of prices on gasoline prevailed early this week at the various interior refining centers of Texas with the trend on an upward swing. Quotations on the U. S. Motor grade varied from 4¼ to five cents per gallon.

Small plant owners have been slow in building up their prices in order to keep their products moving, but at the same time they have restricted offers because of small profits, if any, in operating on the new crude price schedules.

Demand for burning oils has been improved lately, and the North Texas refiners enjoy a price range of 30 to 40 cents per barrel. A group of plant owners has sustained a slump in price because the demand from local drilling rigs is tapering off.

A general advance of one cent per gallon on retail gasoline prices in Texas last week failed to include the third grade product, which is now sold at five cents per gallon less than the standard grade, and eight cents per gallon below the highest products. Refiners' quotations on the third grade gasoline are almost identical with that of the U. S. Motor grade, and as long as this price situation pre-



MARKET SECTION

vails the so-called "blue gas" market will be left to refinery controlled retail stations.

Court action has been launched by the attorney general of Texas to bar the sale of the third grade gasoline, acting on a complaint filed by a jobber and retail dealer at Fort Worth.

San Angelo.—Shell Petroleum Corporation has purchased 900,000 barrels of Winkler County storage oil from the American Petroleum Company, paying the posted price, plus a nominal fee to cover field gathering charges that had been borne by the seller.

This unusually large storage oil deal affords Shell Petroleum Corporation a comfortable reserve supply to be drawn upon as needed, and will probably result in the company's withdrawing its application for an increase in oil purchases in the Yates field.

Winkler County crude is the most popular with purchasers of West Texas oil because of its yield of gasoline with a high anti-knock content.

Panhandle Rules Designed to Conserve Life and Property

Austin, Texas.—In issuing new rules for regulation and control of gas wells in the Panhandle, the Railroad Commission of Texas has taken an important forward step in the conservation of life and property.

The regulations provide that no operator shall take longer than three days to drill in and complete a gas well unless a Miller head or other satisfactory equipment be used to prevent gas waste and danger during the drilling-in process. The commission has reserved the right to make exceptions to the rule in justifiable instances. It is specified that casing shall be set and cemented not more than 25 feet above the point where the first show of gas is encountered in the lime formation when "said wells are to be produced from said formation." When wells are to be completed as oil wells at depths below the lime gas, one string of casing must be set and cemented with sufficient cement to completely and effectually seal off the lime gas formation from the other formations, and all casing must be cemented by the pump and plug method.

This ruling is an addition to the one made by the commission in September, 1928, which was directed to eliminate the same waste, but which rule was intended, primarily, to cover wells being drilled for oil. This rule required that all wells in the Panhandle oil producing fields of Texas where gas is encountered above the oil pay formation in volume of five million feet or more, such gas shall be kept shut in and under control during drilling until casing is set and cemented above the oil pay formation. The enforcement of this rule resulted in the saving of gas valued at $5,250,000 at three and one-half cents per thousand cubic feet, the royalty on which was worth $626,250, and which brought in $105,000 in revenue to Texas. More than 150,000,000,000 feet of gas have been saved by this rule, and even greater conservation is expected by the new one. If the Panhandle field meets expectations as a gas producer, $50,000,000 worth of gas will be saved by the enforcement of these rules.

The promulgation of this rule will also be instrumental in saving the lives of many field workers during the coming years, as gas in the Panhandle comes in under heavy pressures and may run wild unless there is sufficient control at the head of the well, and the fire hazard of improperly controlled wells is serious.

The Miller head mentioned in both rules is the familiar term used to designate a patented drilling method. It is a water-balance system for cable-tool drilling which was especially designed for work in the Panhandle fields. There have been no injuries from fire or poisonous gases since this method of operation has been in practice in the Panhandle fields.

Rules Made for Proration and Crude Purchases in Panhandle

Austin, Texas.—Setting allowable oil production at 55,000 barrels daily for the Panhandle district, the railroad commission on Friday, October 30, issued a long anticipated order governing that area. The order defines the units to be used in allocating the potential and the method of taking potentials which are to be used for proration purposes. Provision is made for the use of temporary potentials pending the taking of actual potentials. Exceptions to the proration rules are permitted in cases where there is serious water hazard due to the pinching in of wells.

Each producer is required to file monthly reports of the oil produced from each well on his properties, and parties purchasing oil are required to file similar reports.

In the order of October 30 the railroad commission made specific regulations governing purchase of oil in the Panhandle. It defined the potential production of each lease as the potential or that part of the potential which the owner tenders for sale.

The deputy supervisor of the commission will be required to make up monthly schedules of oil tendered for sale and to see that purchases are ratable in proportion to the potential of each lease in the area.

Common purchasers are not required to make connections with all wells providing other wells on the lease are capable of producing the allowable of the lease without waste. However, in situations where this is not the case, connections may be required after notice and hearing before the commission. The sale of oil from any lease, however, is limited to the allowable of such lease.

San Angelo, Texas.—Coltex Refining Company has purchased one 55,000 barrel steel tank and a number of small refined oil stock tanks to be installed at its 8000-barrel refinery located near Colorado, Texas. This additional storage will be needed in connection with the company's plans to enlarge the plant, and add equipment for the manufacture of more speciality products.

CRUDE OIL PRICE CHANGES

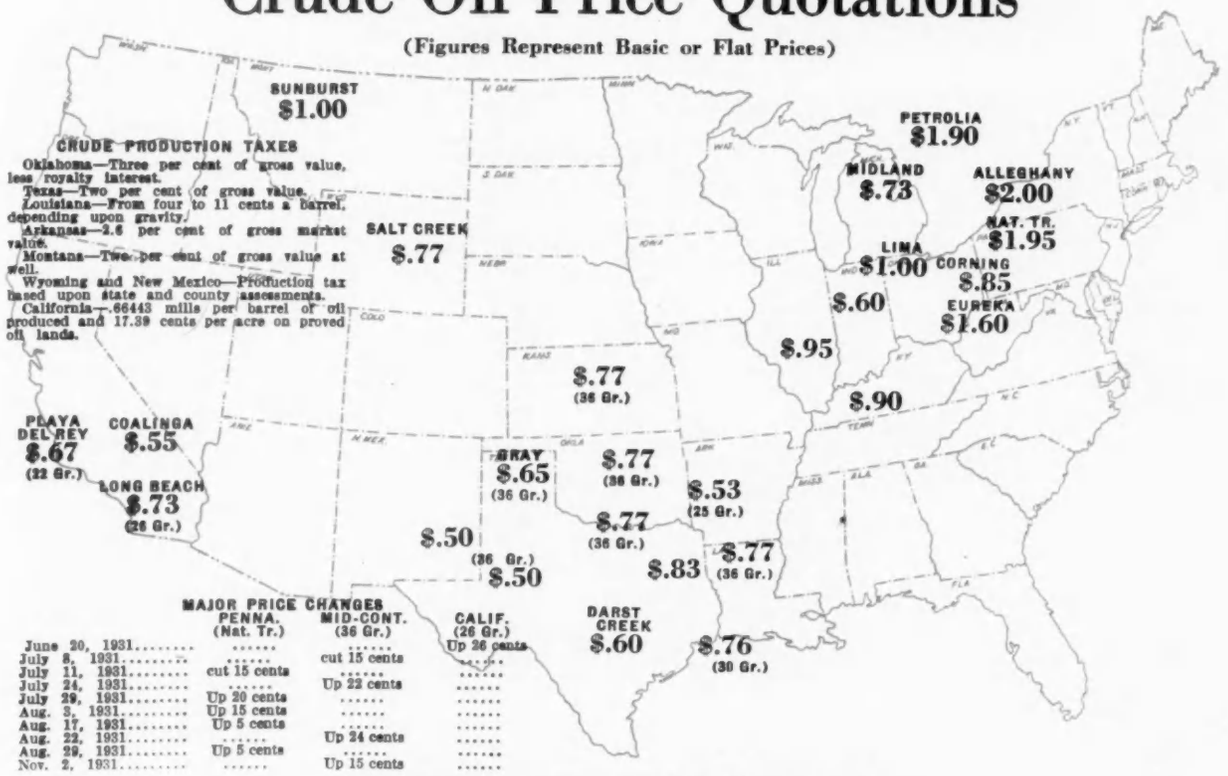
Effective November 3, Imperial Oil Company posted an advance of 10 cents a barrel for Petrolia and Oil Springs, Canada, crude, making the new prices $1.90 and $1.97, respectively.

Effective November 4, Standard Oil Company of Louisiana posted increases of 15 cents a barrel in all districts of Louisiana and Arkansas, except Smackover, which was increased 10 cents a barrel.

Effective November 7, Joseph Seep Purchasing Agency announced a five-cent increase in the price of Corning crude. The new price is 85 cents a barrel.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
June 20, 1931	.....	.....	Up 26 cents
July 8, 1931	.....	cut 15 cents	.....
July 11, 1931	cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....

Official Postings and Differentials

(Revised to November 10, 1931)

California: (Effective June 19, 1931.

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity, 67 cents with differential of two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Los Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective November 2, 1931). Flat Prices.

Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole: 83 cents a barrel; **Cement, Duncan, Walters:** 75 cents a barrel; **Healdton:** 52 cents a barrel; **Hewitt and Graham:** 67 cents a barrel.

North and Central Texas: Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden: 83 cents; **Mexia, Wortham, Corsicana Light, Panola County and Lytton Springs:** 79 cents; **East Texas:** 83 cents. **West Texas:** 50 cents; **Panhandle (Gray County):** 73 cents; **Carson and Hutchinson Counties:** 66 cents. **Mirando crude:** 75 cents; **Darst Creek:** 60 cents; **Corsicana Heavy and Luling:** 49 cents.

Gravity Scale Prices: Below 29 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 85 cents.

Texas Panhandle: (Effective November 2, 1931)

Gray County: Below 35 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 73 cents.

Carson and Hutchinson Counties: Below 35 gravity: 56 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 68 cents.

West Texas: (Effective November 2, 1931).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas, and Lea County, New Mexico: 50 cents a barrel.

Southwest Texas: (Effective November 2, 1931)

Refugio: Heavy: 75 cents.

Refugio, Light: (Same as Gulf Coast—see below.)

Gulf Coast: (Effective November 2, 1931)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 70 cents, with differential of 1 cent for each degree to 40 and above which is posted at 86 cents.

Mirando: 75 cents; **Salt Flat:** 60 cents; **Darst Creek:** 60 cents; **Pettus:** 85 cents; **Markham:** 67 cents.

East Texas (Effective November 2, 1931)

Flat Price 83 cents.

North Louisiana and Arkansas: (Effective Nov. 4, 1931).

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, De-Soto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 53 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price 85 cents a barrel.

Smackover: 55 cents.

Rocky Mountain States: (Effective Nov. 3, 1931).

Salt Creek: Below 29 gravity 61 cents; 38 gravity and above 71 cents a barrel.

Elk Basin and Grass Creek: $1.05; **Big Muddy:** 83 cents; **Lance Creek** $1.20; **Rock Creek:** 85 cents; **Sunburst:** $1.00; **Osage:** 98 cents; **Cat Creek:** 65 cents; **Pondera:** 70 cents; **Hogback, New Mexico:** 72 cents.

Eastern States: (Effective November 3, 1931)

Lima: $1.00; **Indiana:** 60 cents; **Illinois:** 95 cents; **Princeton:** 95 cents; **Wooster:** $1.15; **Western Kentucky:** 90 cents.

Pennsylvania: (Effective November 1, 1931)

Bradford District: $2.00; **National Transit Oil:** $1.95; **Southwest Pennsylvania Pipe Line oil:** $1.70; **Eureka Pipe Line Oil:** $1.60; **Buckeye Pipe Line Oil:** $1.50; **Corning crude:** 80 cents.

Michigan: (Effective Aug. 22, 1931). **Midland: 73 cents a barrel. Muskegon:** Same posting as Mid-Continent; **44 cents to 70** cents a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; **Oil Springs:** $1.97.

Summary of Field Operations, October, 1931

▼ ▼ ▼

Summary of Field Operations—October, 1931
Recapitulation—United States

State	Month of October: Completions	Producers	Gas Wells	Failures	Initial Oil	Production Gas*	Total Production (a)	Cumulative—January to October, Inclusive: Completions	Producers	Gas Wells	Failures	Initial Oil	Production Gas*	Total Production (a)
Oklahoma	57	24	12	21	139,249	33	13,131,400	960	440	173	347	1,940,128	683½	141,005,650
Kansas	39	21	10	8	11,410	133	3,222,200	407	186	111	110	153,360	1455¼	32,376,050
Texas, Outside of Gulf Coast	773	683	14	76	5,413,620	285¾	26,839,950	4497	3305	171	1021	21,247,170	3548	226,913,400
Gulf Coast	29	19	..	10	24,270	..	4,751,650	540	264	9	267	187,675	218½	51,904,600
North Louisiana	22	8	4	10	1,117	115¾	905,200	228	53	67	108	20,141	1409¾	11,015,200
Arkansas	3	2	..	1	987	..	1,137,850	69	29	8	32	3,608	65½	13,375,450
Eastern States	282	74	129	79	13,303	334	3,769,650	2513	664	1161	688	37,890	2438¼	33,916,900
Rocky Mountain States	(b)	(b)	(b)	(b)	(b)	(b)	2,912,150	(b)	(b)	(b)	(b)	(b)	(b)	29,228,900
California	18	18	..	..	26,390	..	15,618,400	311	261	....	50	337,449	....	158,429,700
Total	1,223	849	169	205	5,630,346	901½	72,288,450	9525	5202	1700	2623	23,927,421	9818¾	698,165,850

*Millions of cubic feet.
(a)—Preliminary, subject to revision.
(b)—Not available.

October Development at Year's High Point

Lifting of restrictions in East Texas and establishment of a per well allowable resulted in a sharp increase in well completions during October, and a corresponding gain in new production. Well completions in East Texas nearly doubled in October, increasing from a total of 339 in September to 650 in October. Initial production rose from 2,560,425 barrels in September to 5,390,250 barrels in October.

As a result of the high rate of development in East Texas during October, the summary of United States field operations showed a new high record in well completions for this year and an all-time record for new oil production. Completions in the United States totaled 1223 in October, against 826 in September, while new oil production was rated at 5,630,346 barrels, against 2,757,667 barrels in September. Field operations in Texas recorded a gain for the month of 317 new wells. Increased activity was also noted in the Eastern States, where the number of wells completed increased from 188 in September to 282 in October. This resulted in a gain in new oil production in that area of more than 12,000 barrels.

Initial production in the Eastern district increased from 901 barrels in September to 13,303 barrels. Practically all of this gain in new production in the Eastern States was in Michigan. Completion of several large wells in Isabella and Midland Counties contributed more than 12,000 barrels of new oil production.

Resumption of production activity in Oklahoma and East Texas, following the lifting of the complete shut-down, caused a sharp gain in daily average crude production as compared with September. Total production rose to 72,288,450 barrels, as compared with 61,518,950 barrels in September. The daily average for October amounted to about 2,331,900 barrels, an increase over September of more than 280,000 barrels a day. The production rate during October, however, was not con-

Past Twelve Months

The record for the past 12 months is an interesting study for comparative purposes, the following table giving the field statistics for all states:

Month—	Completions	Producers	Gas wells	Failures	Initial Prod.
October, 1930	1,199	587	245	367	615,002
November	1,253	644	217	392	901,046
December	1,479	650	310	519	979,111
January, 1931	1,156	519	211	426	796,860
February	815	348	192	275	459,727
March	819	347	153	319	704,526
April	905	479	164	262	1,858,297
May	1,095	594	212	289	3,075,384
June	987	593	160	234	2,999,552
July	821	469	140	212	2,720,113
August	899	545	155	199	3,031,762
September	826	473	145	207	2,757,667
October	1,223	849	169	205	5,630,346

*Rocky Mountain figures excluded.

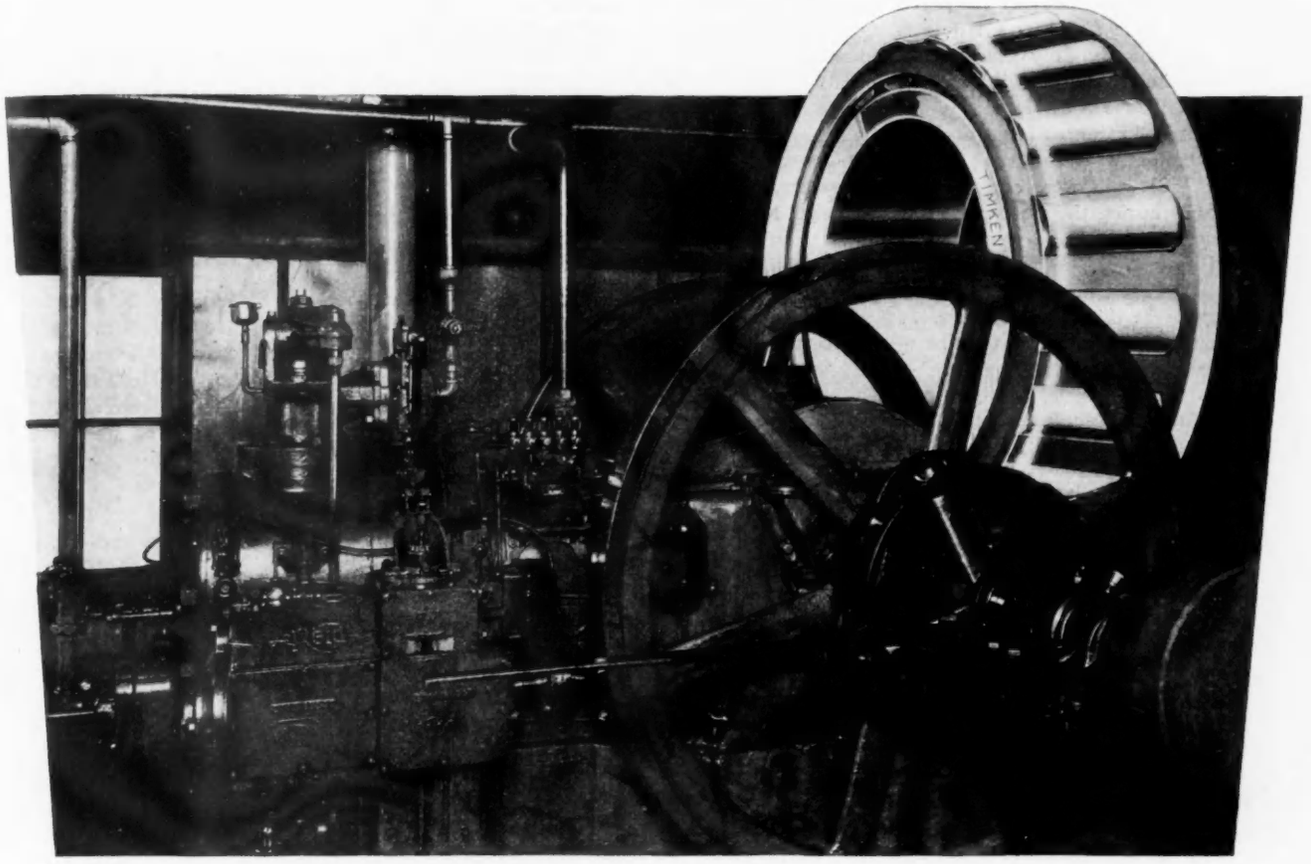
United States Production

State—	Total Production October*	Daily Average October*	Daily Average September
Oklahoma	13,131,400	423,600	261,050
Kansas	3,222,200	103,950	104,600
Texas, Outside of Gulf Coast	26,839,950	865,800	752,250
Gulf Coast	4,751,650	153,250	149,950
North Louisiana	905,200	29,200	29,600
Arkansas	1,137,850	36,700	38,000
Eastern States	3,769,650	121,600	117,400
Rocky Mountain States	2,912,150	94,000	92,250
California	15,618,400	503,800	505,550
Total	72,288,450	2,331,900	2,050,650

*Preliminary—subject to revision.

EAST TEXAS COMPLETIONS AND PRODUCTION
(Cumulative)

County or Field—	Total Completions Jan.-Oct.	Total Initial Production Jan.-Oct.	Total Production Jan.-Oct.
Joiner-Bradford	813	5,097,715	29,047,550
Kilgore	935	7,832,665	35,135,900
Longview	778	6,834,475	18,307,500
Rusk	162	965,036	.....
Other	50	.....	.....
Total	2,738	20,729,891	82,490,950



Three years' continuous pumping service and still going as strong as ever

This Joseph Reid gas engine, equipped with Timken Bearings on crank shaft and lay shaft, was placed in service in October, 1928, and has been in operation ever since, pumping an average of 12 wells, 24 hours a day.

The operator states that in all this time the only shutdowns have been 12 hours a year for changing oil and cleaning up around the engine.

You need this dependable performance and economy in your oil field engines. You can get it in most leading makes. Specify Timken-equipped.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

sidered to be excessive; in fact, it was somewhat below the limit set by the Oil States Advisory Committee. Oklahoma recorded a gain in daily average production of about 162,000 barrels, while Texas, outside of Gulf Coast increased production more than 113,000 barrels a day. Little change was recorded in production of other areas of the United States.

The cumulative record of field operations shows that a total of 9,525 wells were completed since January 1, compared with 16,624 during the same period of last year. New production, however, showed a material gain this year, having increased from 7,923,988 barrels last year to 23,927,421 barrels this year. While these figures are somewhat alarming, they can perhaps be discounted to some extent because of methods used in taking potential capacity of new wells, and subsequent pinching in of flow.

Statistical Committees Predict Lessened Crude Demand
(*Continued from page* 25)

well as in gasoline. During the six months ending September 30, 1931, approximately 12,000,000 barrels of these products were added to storage, the largest quantity accumulated during any previous similar period. This has resulted in the burdensome stock of 40,450,000 barrels on September 30, 1931. In face of these large stocks the forecast indicates the industry is confronted with a continuation of a declining demand. After considering all of these factors the committee feels that a much larger portion of the production of these products should be allocated to cracking in order to bring the stocks of gas and fuel oils to more reasonable levels.

American Business to Seek Anti-Trust Laws Amendment

Washington, D. C.—Amendment of the anti-trust laws to permit agreements looking to the conservation of natural resources and avoidance of unnecessary and wasteful practices will be asked of the next congress by American business.

Hearings already have been started before congressional committees, and it is anticipated that the Senate and House will give serious consideration to the task of bringing the 40-year-old Sherman Act up to date that it may meet the conditions of modern business.

There seems to be no great demand for upsetting the principles of the anti-trust laws, wherein they prohibit illegal combinations in restraint of trade or to create dangerous monopolies. However, under supervision of government officials, the United States Chamber of Commerce has moved to the end of legalizing agreements for curtailment of oil, coal and timber production, among other commodities.

No indication has been given at the department of justice as to whether Attorney-General Mitchell will make recommendations on the anti-trust situation to the next congress. Mr. Mitchell has discussed the anti-trust question on a number of occasions, pointing out that it is incumbent upon the department to enforce the law, where violations occur, despite the depression.

There is no probability that Mr. Mitchell will suggest changes in the basic principles of the anti-trust laws. However, he might be favorable to changes which would permit agreements, under proper limitations, to conserve the natural resources of the nation.

There is little doubt but that the department of justice has been more liberal in its handling of anti-trust cases in the last two years than theretofore, because of the depression. Fewer prosecutions have been brought before the courts and every effort has been made to bring about an agreement whereby anti-trust cases could be kept out of court.

Sterling May Propose New Production Restriction Plan

Austin, Texas.—Governor R. S. Sterling is studying a proposed new plan for restricting production in the East Texas field, and it is understood that he is contemplating announcing a revised order shortly. He has not revealed the basis of the plan, but it is believed in Austin that it will be a combination of the per-well and acreage plan, using the former in the congested drilling areas, and the latter in those sections of East Texas which are sparsely drilled.

Since Brock-Lee Oil Company's injunction and contempt suit has been postponed to the January term of court, General Wolters will continue to enforce the governor's orders in East Texas. It has been learned from reliable sources that the plaintiffs in the Brock-Lee suit will not press their case, and will ask for a further continuance when the suit comes to trial.

State Attorney Delays Action On Third Grade Gasoline Suit

Austin, Texas.—After a conference with attorneys of major oil companies, Attorney General Allred announced November 10 that he will grant them more time in which to procure data concerning the third grade gas being sold in many of the major company stations to compete with cheap grades offered by some independent companies. The suits already filed by the attorney general in the courts at Fort Worth will not be pressed, pending this delay.

In an official statement issued on Monday, November 9th, Attorney General Allred stated that his department will continue to investigate and prosecute parties found selling gasoline which does not meet with the requirements of official state tests. He said:

"According to the reports I have and the tests made by chemists, we are in position to file a number of complaints in various places over the state, including Austin, for the sale of an inferior grade of gasoline which does not come up to the specifications of the state law.

"According to reports in the press, some of the representatives of major oil companies, who are selling this inferior grade gasoline, are making the claim that the law under which they are being prosecuted is an old law. The same might be said of a great many of our laws, but this would not justify any company in selling a grade of gasoline which they admit is not only not up to the standards provided by law, but, according to one of the company executives, will actually harm an automobile motor.

"I have had complaints from some of the independents that this practice on the part of the major companies of placing this inferior grade of gasoline on sale, and at the same time making the frank statement that it was not fit for use, was for the purpose of creating the impression that any gasoline except the standard brands sold by the major companies, was an inferior grade; when, as a matter of fact, according to sworn testimony, most of the major oil companies purchase a large quantity of independent gasoline, and then sell it through their stations as their own."

Roeser Heads New Texas Association; Five Organizations Consolidated

FORT WORTH, Texas.—An aggressive organization dedicated to the conservation of oil and gas resources of the state and to promote the welfare of producers and owners of mineral lands was organized on a permanent basis during a joint meeting of major and independent operators and royalty owners held here November 6. This body is identified as Texas Oil & Gas Conservation Association, and has been functioning on a temporary basis since September 10 as an outgrowth of the consolidation of five organizations representing various sections of the state. Charles F. Roeser, Fort Worth independent operator with considerable holdings in the East Texas field, was elected president after having served as acting head of the organization during its formative stage.

Starting with a paid membership in excess of 1800, Texas Oil & Gas Conservation Association promises to become the most active body of oil men within the state. It was sponsored by independent producers, representing the principal fields within the state, and also has the backing of sufficient major operators to enable the body to assume leadership in dealing with oil and gas matters. The following organizations were absorbed by the association; North Texas Oil & Gas Association, East Texas Home and Land Owners Association, San Antonio Independent Operators' Association, East Texas steering committee and the Texas oil emergency committee.

Regional Representation

Ample representation for all important oil and gas fields within the state on the board of directors was provided for in choosing more than 70 oil men and royalty owners to serve in such a capacity. With the same purpose in mind the roster of 22 vice presidents were chosen so as to include a resident of all the principal cities and towns in the producing areas. J. D. Collett, Fort Worth, was elected first vice president, and the following were selected as vice presidents at large: Captain J. F. Lucey, Dallas; Dr. N. D. Buie, Marlin; and Colonel J. Lewis Thompson, Kilgore.

The vice presidents follow: Wilbur C. Hawk, Amarillo; George D. Morgan, San Antonio; Joseph Edwards, Big Spring; P. Barney Flynn, Wichita Falls; Frank P. Zoch, San Antonio; George Sawtelle, Houston; Beeman Strong, Beaumont; Ed. A. Landreth, Fort Worth; W. L. Todd, Dallas; J. K. Hughes, Mexia; Clifford Mooers, Longview; H. L. Hunt, Tyler; Malcolm Crim, Kilgore; R. L. "Bob" More, Vernon; D. H. Bolin, Graham; John R. Alford, Henderson; Marshall Young, Breckenridge; Jake Hamon, Jr., Gladewater; John Gholson, Ranger; R. L. Wheelock, Corsicana; R. A. Motley, Overton; and C. H. Sherman, Abilene.

Presiding as temporary chairman of the meeting, Collett stated that the purpose of the organization is to devote its efforts to the conservation of oil and gas resources, and to assist proper authorities of the state in carrying out conservation laws.

Conservation affords equalization grounds on which majors and independents can meet and share equally in oil and gas production, according to Roeser, and at present it is of vital importance to about 30,000 stripper wells in Texas that are yielding about 100,000 barrels of production daily. Wells falling within this classification must be sacrificed unless the output of the flush fields is curbed. Roeser stated that the older order of permitting the law of supply and demand to govern the oil business passed out of the picture with the discovery of the Yates field, as all previous discoveries had been absorbed. He pointed out that the nation now has sufficient oil to supply its needs for the next six or seven years without further stimulation of drilling and production.

CHARLES F. ROESER
Fort, Worth, president of Texas Oil and Gas Conservation Association

A resolution in the form of a telegram was endorsed by the members of the association to advise Governor R. S. Sterling that the group commends the stand he has taken in conserving the oil and gas resources of the state.

Executive Committee

The affairs of the association will be largely guided by an executive committee, composed of nine members to be selected by the president from the ranks of the vice presidents and directors. It is planned to engage the services of an executive vice president, and a secretary. Both of the latter will be employed on a full time basis. Membership dues are $1.00 annually, while additional financing will be accomplished through a voluntary contributing membership, with assessments based on annual production. The selection of the city to serve as headquarters of the organization was deferred, although it is certain to be Dallas or Fort Worth.

Digressing from the scheduled program, Roeser explained the acreage method of fixing allowable production as intended for the East Texas field in response to a request made by Roy Jenkins, Dallas operator. Roeser stated that the substitute proration plan he submitted to operators at a gathering in Dallas October 27 was intended to forestall the drilling of approximately 3000 more wells in the field, while a fraction of this number would serve adequately in draining the area. Freeman W. Burford, president, East Texas Refining Company, Dallas, suggested that the meeting go on record as endorsing anything Governor Sterling does in regard to the East Texas proration situation. Jenkins explained that the acreage plan would work a hardship on his property in the Joiner area, where it has been necessary to drill four wells on a 30-acre lease in taking care of direct offsets, and that the production is sold under contract at 45 cents per barrel.

September Statistics Show Further Improvement

By H. J. STRUTH
Staff Economist

THE barometer of the petroleum industry for September recorded further favorable changes that aided materially in paving the way to higher crude prices. Production of crude declined to a daily average of 2,121,000 barrels, bringing the index number for that month compared with the same month of last year down to 89; in August the index number stood at 91. This means that crude production in October was 11 per cent below the rate of October, 1930. Crude oil stocks were reduced nearly 12,000,000 barrels, declining to a total of 466,471,000 barrels, against 520,900,000 barrels at the end of October, 1930. This amounts to a net reduction in stocks under last year of 10 per cent. Crude oil imports also show a decline compared with last year of 41 per cent, while exports of crude are 17 per cent above October last year. The supply of crude, production plus imports, during October represented a decline under last year of nearly 10,000,000 barrels. Current supply for October amounted to 67,062,000 barrels, compared with 77,024,000 barrels in October, 1930.

These figures furnish ample justification for the recent advance in crude. The barometer shows, however, that there are still certain factors of an unfavorable nature that must be corrected if the anticipated upward price movement is to be sustained. While potential production is not nearly so important at present as it was some time ago, the fact remains that every well completed, regardless of potential capacity, becomes a market factor. This is particularly true in East Texas, where every well completed in accordance with state requirements becomes another source of allowable supply that must find a market. It is this situation which has created the necessity for constant revisions in well allowables. It is perhaps, also, the effectiveness of state orders in controlling the daily output of East Texas that has made possible the realization of higher crude prices.

While there has been a material decline in the number of wells completed in the United States this year, it is apparent that East Texas has furnished the bulk of new drilling operations. In fact, there is little reason to believe that there will be any material cessation in drilling in East Texas in the near future. As long as operators there are willing to accept the necessity for constant revisions in well allowables, drilling will continue until the entire area has been drilled. This points to the possibility that the eventual well allowance will be reduced to about 85 barrels per well, assuming that a total of nearly 5000 wells will eventually be drilled. Thus, while drilling in East Texas will probably continue at present rates, the situation there can be said to have reached a state of control that has definitely removed any uncertainty which prevailed earlier in the year. This, along with the industry's marked statistical improvement, offers sufficient reason to believe that the upturn in the crude market is of more than momentary significance.

If potential crude production is disregarded an influential factor in the oil situation, it is seen that the only other unfavorable factors are confined to the refining branch of the industry. Gasoline production has undoubtedly been maintained at too high a level, when measured in terms of domestic and foreign demand. Runs to stills for the first nine months of this year have, it is true, shown a reduction under last year of five per cent. Nevertheless, stocks of refined oils have only shown a decrease under last year of less than one per cent—and that decline was only recorded during September. Gasoline stocks, however, have shown a net decline under last year of eight per cent. On the other hand yield of gasoline from crude has shown a gain over last year of five per cent, and the results for September indicate a gain of seven per cent. Actually, the per cent yield from crude has risen from 42.79 per cent in October of last year to 45.62 per cent this year. This is a very important factor to be considered in gauging normal refinery operating requirements for crude.

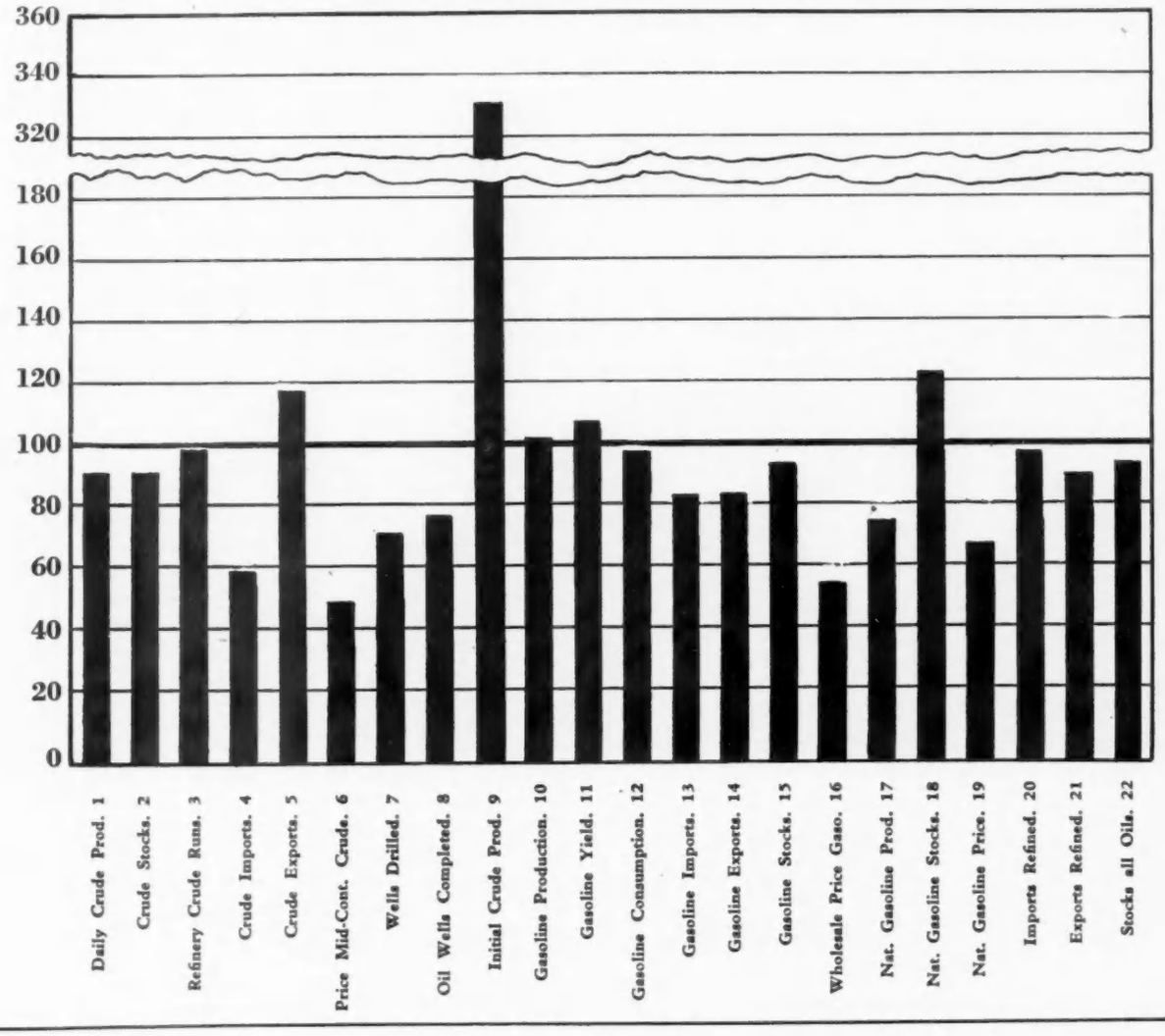
Prices for September make a very poor showing in the barometer, but subsequent upward revisions are expected to reflect improvement. If the factor of potential crude production was not included in the weighted index of supply, it would be possible to show a considerably smaller unfavorable margin between supply and demand. Still runs for November and December are expected to show a material reduction; reports for the last week in October revealed a decrease in crude throughput of more than 100,000 barrels a day. If still runs are curtailed to the extent of at least 200,000 barrels a day under the rate recorded at the end of October, it is believed that gasoline stocks will be drawn upon sufficiently during the last two months of the year to make a more favorable showing. Everything depends, now, upon the course of refinery operations and upon the ability of refiners to maintain a reasonable wholesale refined oil price structure. If runs to stills are reduced as indicated, the industry's price structure will continue to show improvement and the outlook for next year will warrant sustained optimism and confidence.

Abandon Lower Part of Hole In Huntington Beach Deep Test

Huntington Beach, Calif.—Superior Oil Company has abandoned the lower part of the hole in Eberle 1, a deep test in the Huntington Beach field which was drilled to 9055 feet, and will plug back to test upper showings. Showings below the nine-inch casing at 9177 feet may be tested, but the ultimate object seems to be to plug back for completion in the still shallower zone around 4300 feet.

Abandonment of a portion of the hole was a blow to deep sand boosters who were standing by to deepen a large number of shallower producers. Eberle 1 stopped in a hard gray sand which showed little or no cut. The company has two other deep wells shut down below 7000 feet, but may make no effort to complete them at this time. Eberle 1 is considered as a representative and fairly conclusive test, but other wells may be tested on the theory that a shut-off may bring commercial production.

Salient Oil Industry Factors for September, 1931, Expressed in Per Cent of September, 1930. Heavy Line (100) Represents September, 1930



Oil Industry Barometer—September, 1931

Index of Salient Factors—Current and Cumulative

	Factors—	This Month			9 Months Ending Sept 30		
		Last Year	This Year	Index (1)	Last Year	This Year	Index (1)
1	Daily Average Crude Production (Thous. Bbls.)	2,374	2,121	89	2,528	2,312	91
2	Total Crude Stocks (Thous. Bbl.)	520,900	466,471	90	520,900	466,471	90
3	Refinery Crude Runs (Thous. Bbls.)	75,950	75,094	99	711,540	673,859	95
4	Crude Imports (Thous. Bbls.)	5,808	3,426	59	47,874	35,225	74
5	Crude Exports (Thous. Bbls.)	1,961	2,296	117	18,434	19,637	106
6	Posted Price 36 Grav. Mid-Cont. Crude (Per Bbl.) (2)	$1.29	$.62	48	$1.28	$.59	46
7	Wells Drilled*	1,165	826	71	15,425	8,323	54
8	Oil Wells Completed*	619	473	76	8,631	4,377	51
9	Initial Crude Production (Thous. Bbls.)*	833	2,758	331	7,309	18,403	252
10	Gasoline Production (Thous. Bbls.)	36,944	37,469	101	335,461	327,118	98
11	Gasoline Yield—Average Per Cent of Crude (4)	42.79	45.62	107	41.72	43.91	105
12	Domestic Gasoline Consumption (Thous. Bbls.)	37,823	36,742	97	302,615	307,165	101
13	Gasoline Imports (Thous. Bbls.)	1,538	1,256	82	13,264	11,061	83
14	Gasoline Exports (Thous. Bbls.)	4,029	3,355	83	51,177	35,937	70
15	Gasoline Stocks at Refineries (Thous. Bbls.)	38,194	35,033	92	38,194	35,033	92
16	Refinery Price U. S. Motor Gaso.—Group 3 (Cents)	6 1/3	3½	55	6¾	3⅜	50
17	Natural Gasoline Production (Thous. Bbls.)	4,152	3,062	74	39,638	32,740	83
18	Natural Gasoline Stocks (Thous. Bbls.)	2,534	3,088	122	2,534	3,088	122
19	Price Grade "A" Natural Gasoline, Group 3 (Cents)	5¾	3⅞	67	5½	2⅞	52
20	Imports of All Refined Oils (Thous, Bbls.)	3,614	3,468	96	33,572	29,411	88
21	Exports of All Refined Oils (Thous. Bbls.)	8,753	7,816	89	103,491	76,742	74
22	Total Stocks of All Oils (Thous. Bbls.)	678,392	623,226	92	678,392	623,226	92
	Weighted Index of Supply	.....	.....	111	.....	.....	106
	Weighted Index of Demand	.....	.....	97	.....	.....	89
	Weighted Index of Prices	.....	.....	56	.....	.....	49

*Exclusive of Rocky Mountains. (1)—Last Year—100.
(2)—Weighted Average. (3)—Monthly Average.
(4)—Straight run and cracked gasoline only.

GOVERNING PRINCIPLES

(*Continued from page 27*)

Should a deeper, or separate, producing horizon be discovered, it should be handled in the same manner as if it were a separate pool, and be produced through separate wells. Precaution must be taken to prevent oil, gas, or water from one horizon escaping into another, except when such transfer may be deliberately made in the interest of efficient operation.

Equitable Distribution of Proceeds From Pool

During the exploration of the pool its limits are defined and the characteristics of the oil bearing formation, and the oil, gas, and water content of the reservoir are determined. A compilation of this information reveals the average thickness, porosity, and permeability of the reservoir, and is used to determine the volume of oil and gas under the individual leases covering the pool.

An improved method has been developed recently by which the relative oil content of the various properties can be determined. This method is superior to the method of allocating values on sand thickness, porosity, permeability, and percentage recovery, and may eventually supersede it. The new method utilizes information obtained from flow characteristics of the wells. Any time after a well is completed, it is allowed to flow at various rates by changing the choke size, and the bottom hole pressure is carefully measured. The relation between the rate of flow and change in bottom hole pressure gives the engineer a measure of the ability of the formation, in the area surrounding the well, to produce oil. The ability of the formation to produce oil in various places gives an accurate measure of the relative value of various properties.

There are a large number of pools in which exploration will show that certain tracts contain predominantly free gas. Owners of such tracts have a right to the gas itself, but not to the energy contained in the gas. This energy is common property of the owners of the pool. Owners of tracts underlaid by gas are entitled to recover it, but in doing so they must not dissipate the energy of the pool as a whole.

The determination of the extent of participation in the proceeds from the pool by owners of tracts underlaid by gas offers one of the most difficult problems in establishing principles governing equitable and efficient oil pool development, but it can be satisfactorily solved.

In order to compensate the owners of the free gas, there are three proposed plans:

1. The value of the free gas compared to the oil may be estimated, and the owners of the free gas given an overriding royalty on the oil produced.

2. An estimate may be made of the volume of free gas, and this purchased in place by the owners of the oil.

3. The pool may be operated so that none of the free gas is wasted, and after oil production ceases the free gas owners are left with their gas to dispose of as they see fit. Unless the oil can be produced with only its dissolved gas, this would involve repressuring or the injection of gas into the free gas area. In order to compensate the owners of free gas for the delay in their income, they could be currently paid the equivalent of the interest in the delayed income.

After the well spacing program has been worked out, and the productivity of the tracts in the pool determined, production of oil should be started on a commercial basis. The problem then becomes one of so utilizing the reservoir energy as to move the maximum quantity of oil to the well, and so control the forces comprising reservoir energy that a minimum volume of oil is left in the sand as the water level rises in the formation and the pressure existing in the sand diminishes. Equity is attained by maintaining an even distribution of reservoir pressure over the pool at all times. To accomplish this the wells must be produced with a minimum gas-oil ratio in order to produce the least amount of dissolved gas from oil left behind in areas remote from the well. Gas-oil ratio is not the only determining factor, as the rate of water encroachment is of prime importance. A uniform rise of the water table in a producing formation, with accompanying maintenance of hydraulic pressure, is an important factor in keeping equitable distribution of reservoir pressure, as well as preventing underground waste. It is important to maintain for the longest period of time reservoir pressures which approximate the original rock pressures, and which do not decline to a pressure less than that necessary to flow the oil from the well. In most pools it is advisable to return to the formation as much of the gas produced with the oil as possible, in order to maintain the proper reservoir pressure. In most cases it is necessary to start the return of gas to the reservoir from the beginning, in order to maintain the desired pressure relationship. However, a close study of the effect of the water-drive should be made in determining the proper time for starting injection. In many pools it is generally recognized that beneficial effect is obtained by returning certain of the lighter fractions contained in the gas, such as casing-head gasoline, butane, propane, etc., to the formation under pressure.

Advantages to Accrue From Application of These Principles

When an oil pool is developed and produced in accordance with the basic principles outlined above, certain results can be assured.

1. Equitable distribution of reservoir content among the owners in the pool. This follows the principle that the various leaseholders are entitled ultimately to an amount of oil equal to that originally underlying their land, although the oil may not be produced through wells located on their land.

2. Greater ultimate recovery of oil. It is generally agreed among engineers that a much higher recovery per acre will be secured under methods embodying the principles outlined above than under old methods in which dissipation of reservoir energy is rapid and uncontrolled. A recovery figure generally used for the old pools in the Mid-Continent is 20 per cent of the oil originally contained in the sand. It is believed that operators can easily secure an additional 20 per cent of the oil content of the sand. It is even estimated by some that 50 per cent of the oil contained in the sand will be recovered by the adoption of improved methods.

3. Reduction in operating expenses. A higher percentage of the recoverable oil can be produced by flowing. The oil which is flowed from a well is produced cheaper than by pumping, gas lifting or other artificial means. Costs are also lowered through elimination of wells, orderly

drilling, less maintenance, and avoiding unnecessary lifting of water.

Operating costs can be reduced under cooperative operations, as well as under strict unitization, as long as the fundamental engineering principles are adhered to. Additional economies can be effected by a combination of operations under one management. Kettleman Hills, California; Big Lake, Texas; Yates Pool, Texas; Van Pool, Texas; Sugarland, Texas; Raccoon Bend, Texas, and Cook Pool, Texas, are operated in a manner to incorporate many of the principles outlined above. Some of these pools are under one management; and, in others, the individual operators retain complete control of their own operations, and accomplish, in a great degree, the same economies and advantages as under unitized projects. Although none of these operations contain all the good points of the ideal, they represent substantial progress towards the goal for which engineers and all progressive companies are striving.

THE POLICIES INVOLVED

(*Continued from page 26*)

Problem Is Not Solved by Policy of "Survival of the Fittest"

Our problem is not to be solved by cheerfully accepting a policy of "survival of the fittest." To such a program a small minority of the industry is still committed; but I say: that way lies disaster. We will have no peace through a war of extermination. The world's history since 1914 has surely proved this. If anybody imagines that by ruthlessly crushing the weaker units the excesses of production can be curbed, he is tragically mistaken. It would drive out all those splendid forces of adventure, initiative, individual effort, and bull-necked courage on which the industry depends for finding the hidden stores of crude. No program of eliminating these vital forces has ever worked or ever will. To seek salvation that way would be about as wise as Noah would have been if, instead of building "the Ark," he had started work on an irrigation system. Whoever would commit us to such a plan is forgetting the parable of the swine that got some distorted notions into their heads and hurled themselves into the sea.

But even if such a program succeeded, its success would be more unfortunate even than its failure. I would be sorry for the surviving "fittest" when he found himself alone on top of the petroleum world—object of all suspicions, target for all hatreds; ham-strung by impossible regulations, and an easy-mark for the legislative experiments alike of half-baked radicalism and hard-shell demagoguery.

How Does the Law of Supply and Demand Work?

Of course, there is always the good old law of supply and demand to fall back upon for defense of any unconscionable economic distortion. Whatever the law of supply and demand might mean in a free state of industry and economics, it has been pretty well repealed by practice and statutes; what is left of it needs policing to save it from legislative rape and judicial mayhem. That supply is determined by demand, and that in the long run they balance each other, is good enough generalization for the economist thinking in the absolute zero of a perfect vacuum; but let's see how it works. Whose "demand" caused East Texas to well-nigh drown the industry? Whence has come the "demand" for huge, untimely, and wasteful new production that repeatedly has brought chaos into the business? Certainly the industry didn't "demand" it; nor did the consuming public. The fact is that the oil industry, as now restricted by statutes and injunctions, by laws and decrees, is about as responsive to the classic law of supply and demand as Sir Isaac Newton's apple was to the gravitational pull of the planet Neptune.

Is it not time for us to recognize these things, and get together on a plan to solve our difficulties? You gentlemen, responsible to your stockholders and to your country, know it is time to act. Then why hold back? I say to you that if this meeting can agree on a plan and set up machinery for its operation, it will have rendered the Institute's greatest service.

Unit of Cooperation Plan Is Best Method for Operating a Pool

I submit two suggestions. They look to economy, to conservation, to establishing an adequate reserve, and to making new production discoveries a safeguard rather than a menace. They are:

1. Complete and unqualified adoption of a unit plan of production.

2. Corollary to the first, the acceptance as fundamental that each owner in a pool is entitled to his equitable share in its oil and gas, as opposed to the present anarchic rule of everybody getting all he can as fast as he can.

Certain principles of unitization of an oil field were included in the plan which Henry L. Doherty advanced several years ago. I was among those who opposed him, not because we did not believe a unit plan of operating an oil field was desirable, but for the reason that the industry was almost unanimous in the opinion that the plan then proposed was, at least at that time, wholly impractical. I do believe that the best method of operating an oil field can only be reached through some kind of unit, or co-operative, operation. I believe that 75 to 90 per cent of the industry thinks the same. I want to see us united 100 per cent on that policy, and then go forward to the goal. Whether we agree with Mr. Doherty or not, he is entitled to great credit for having been one of the earlier advocates of the principle involved in this method of producing oil.

Unit operation would effect great savings in investment, in operation, in recoveries of oil, in conservation and proper use of gas for repressuring, etc. Clarel B. Mapes, technologist of the Mid-Continent Oil & Gas Association, has said that the Greater Seminole pools, if unified, would have required 640 fewer wells. These at $85,000 each would have saved $54,000,000. Air-lift investments would hardly have been made, saving another $60,000,000 to $100,000,000. Mr. Mapes also claims that to properly utilize the gas from the average field is worth 25 cents per barrel of oil produced.

East Texas, with 100,000 acres of probable producing area, has 5000 20-acre units. Drilled with one well to each 20 acres, as is a conservative estimate of what will take place under present practices, it will require 5000 wells, costing about $100,000,000. If this field produces, as it is claimed it will, 20,000 barrels per acre, and at the rate of 400,000 barrels per day, it would require 14 years to get its production. The field will actually produce for a much longer period. Unit operation would have saved fully 50 per cent of drilling, or $50,000,000. If under present practices we drilled one well to 10 acres, as might easily happen, the saving by unit operation would be much greater. Further, with a 100 per cent saving of gas and

repressuring therewith, much more oil would be produced, at much less cost.

Anti-trust Laws Are No Longer Dicta of Ultimate Wisdom

My second suggestion, that each owner in a pool is entitled to his equitable share of its oil and gas, sounds startling in view of the history of the industry, and of court decisions allowing to each owner all that could be recovered through his property. I shall not discuss the legality of this theory, or the method of changing our laws to establish it. Conditions change, and conceptions of right and wrong change with them. The Hill railroads only a few years ago were prevented by the courts from merging, and public opinion sustained the courts. But a little later opinion had so reversed itself that congress passed a law to force such consolidations; and now the railroad managements can not effect them fast enough to satisfy either legislators or the public. I am convinced there has been a like shift of attitude toward the oil industry. Oil is produced in nearly half the states, and the industry is closer to more people than any other save agriculture. Its unique production problems are better understood by outsiders than we realize. Ancient prejudices against the industry have lost their edge. Anti-trust laws are no longer accepted as the dicta of ultimate wisdom. Why, the President of the United States himself pointed the way for us. Do we forget what he, as Secretary of Commerce, said only a short time before he became his party's nominee? Let me recall it. I read from the famous Tulsa interview:

"An amendment to the Sherman act, permitting oil companies to curtail their drilling activities in small localized fields, which may threaten to upset the conditions of the entire industry, seems to be advisable.

"I believe that the oil industry is clean . . . When one considers the widespread distribution of gasoline, and the very limited amount of profit in a gallon of gasoline, surely not over two cents per gallon, considering everything, it is surprising. It is a wonderfully distributed product.

"You have the annual meeting of the American Petroleum Institute coming to your city in December; and if the members of this body can get together and formulate some plan regarding modification of the Sherman anti-trust act, as applied to drilling flush fields, and properly present this plan, I see no reason why it should not receive favorable action at the hands of congress.

"When the Federal Oil Conservation Board was formed, there was a suspicion in the minds of all of them that it was created to harass and worry the oil business. That absolutely was not the intention. The Federal Oil Conservation Board was formed for the purpose of assisting the industry and helping it to work out whatever problems confronted it.

"In doing this work, it has already made a start; and other steps will follow. In assisting the Federal Oil Conservation Board, the industry can do much, and most of the remedies which will be helpful to the petroleum situation should originate within the industry itself."

Thus said Secretary Hoover in October 1926. It was not the horseback statement of a politician out to please, but the considered expression of an experienced engineer whose service on the Federal Oil Conservation Board had given him an especial familiarity with our problems. He is now President of the United States. Are we not, then, justified in hoping for a sympathetic governmental attitude?

Present Legal Conceptions of Oil Ownership Are Based On Migratory Game Laws

When the old principles of oil and gas recovery were enunciated by our courts, there was little technical knowledge for estimating the oil available. The industry was in its infancy, and laws and rules of that time were applied. Our present legal conceptions of ownership of underground deposits are based on a ruling made by an early Pennsylvania judge who, lacking any precedent, drew on the migratory game laws! Farmers killed ducks that flew over their lands, and were conceded ownership of such as they reduced them to possession. The judge, probably thinking that oil flowed in underground rivers—a popular early conception—and at least being fundamentally correct in adjudging oil and gas as migratory, decided that the case was analagous to that of migratory birds and animals; and, therefore, oil and gas were properly the property of the man who captured them on his land.

The early decisions were based largely on the theory that there was no other way of determining ownership. I quote briefly from a decision in 1906, in Barnard vs. Monongahela Gas Company 216, Pennsylvania State Reports 362, which says, in part:

"There is no satisfactory way of ascertaining how much of the oil and gas that comes out of the well was *in situ* under this farm and how much under that. What has been held to be the law?"

Then, after stating the view that oil and gas belonged to the man who reduced them to possession through his land, the court said:

"This may not be the best rule, but neither our legislature nor our highest court has given us any better."

This seems to show conclusively that the decisions at that time assumed there was no other method of determining relative rights. I think it is agreed now by oil engineers that the only "rivers of oil" in motion under a property are those created by the extraction of the oil itself; and that the operator may receive not only the oil originally under his own property, but also that which belonged to his neighbors.

Unregulated Competition Results in "Legalized Robbery"

Obviously, these ideas cannot be countenanced by fairminded oil men of today. Our understanding of the physics of oil and gas in underground reservoirs forces us to realize that unregulated competition results in inequities which are no less than "legalized robbery." Moreover, just as game hunters no longer have unlimited privileges, but are restricted as to numbers and seasons in which they may take game—is it not time, too, for the oil industry to get its rights defined logically? Should not the "game hog" in oil, who is destroying hundreds of millions of dollars in values be likewise controlled? We make ourselves ridiculous by retaining an archaic conception of rights, when it is possible to define them scientifically, accurately, and equitably.

Our present engineering service claims to be able to estimate within three per cent of the amount of oil recoverable from a given proved area. So, if the recovery is given an equitable distribution among surface owners, and if we are permitted a reasonable measure of co-operation, it will be possible for us not only to increase the total recovery, but to produce it more cheaply, and with less capital investment. We can insure long years of prosperity to the communities in which we operate, as contrasted to the mushroom developments so familiar to us: booms, that leave in their wake deserted towns, wrecked banks, and impoverished merchants. We will be able to furnish steady employment, to build up a reserve of raw material, and to insure a stable and continuing tax income in the communities where we operate—commensurate with the values produced.

Government Accepts Engineering Estimates of Recovery

The government, in its depletion allowances, accepts the engineering estimates of recovery. The old theory of discovery rights was doubtless the best possible when it was enunciated; but if these rights can be determined with substantial accuracy,

there is no more reason why one operator should steal oil or gas from beneath his neighbor's land than that he should take coal, iron, or any other property.

The oil industry under the old program of "getting thar fustest with the mostest" wells has built up a great business; but in doing so it has created a Frankenstein which bids fair to ruin its creator and destroy a most important national resource. Wallace E. Pratt, a recognized authority, recently estimated 10,000,000,000 barrels of oil in sight, and said we are now using 900,000,000 barrels a year. He says it will take 30 years to produce this 10,000,000,000 barrels, and that during each year of this period we will have to develop 1,000,000,000 barrels of new discoveries, equal to 10 major fields; also, on the experience of the past 14 years we will require to explore 3,000,000 acres per year by drilling 20,000 wells. Most of the 3,000,000 acres thus explored will be eliminated from future consideration, as the production will come from about two per cent of the area explored.

If Mr. Pratt is right, the industry under our present procedure will drill in the next 20 years 400,000 wells at an average cost of $50,000; total, $20,000,000,000. On the other hand, scientific and non-competitive drilling would produce the same amount from one-half—or less than one-half—as many wells, at one-half the expense; and when we had done that, we would still have half the recoverable oil left in the sands, because of better engineering practices under such a plan. In fine, unit development and equitable distribution promise to double our recoveries from a given field, at half the cost of drilling.

We Dare Not Reject Program of Unit Development and Equitable Distribution

Can we reject such a program? I say we do not dare. It seems to me that if the industry shall merit confidence in either its financial operations or in its attitude toward conservation, it must forthwith solve this, its greatest problem. To fail will be to admit that our industry can only be managed under martial law.

President Hoover's statement, from which I have quoted, assures us of governmental co-operation. Unquestionably, the overwhelming majority of the industry agrees with him. Let me quote briefly from some men whose qualifications to speak will hardly be questioned. On September 21, R. C. Holmes, president of The Texas Company, wrote me:

"I am definitely of the opinion that it probably is perfectly sound business and ethical for a man to have the right to do with his property as he sees fit in most cases, but that when action on his part (as applies to the production of crude petroleum) forces an action on his neighbor, regardless of market conditions or prices, it is in principle unsound and can be very unfair."

And Henry M. Dawes, president of Pure Oil Company, on September 19, wrote me:

"The law of the jungle is that 'finders are keepers.' With the exception of the migratory products of oil and gas, this principle is not supported by statute. Production of oil and gas in the past has been largely governed by the efforts of producers to run their drills down so fast that they will get not only their own oil, but that which really belongs to their neighbors. This is the practice which is responsible for 90 per cent of the havoc occasioned by irrational, unregulated production. The proper recognition of property rights is possible through the co-operative operation of oil pools as units. If the predatory instinct of human nature should ever be mitigated by appeal to enlightened self-interest, it is perfectly possible, legally and physically, to evolve a system of civilized operation."

From D. J. Moran, president of Continental Oil Company, I quote this vigorous pronouncement:

"I am definitely of the opinion that each separate owner is entitled to a share of the oil and gas produced from an area on a per-acre basis of ownership. The present cut-throat methods of extracting oil as fast as it is possible to secure it have proven to be very unprofitable."

Also, W. H. Berg, vice-president of Standard Oil Company of California, wrote me on September 30, as follows:

"The most logical solution of the problems of over-production of crude oil is the unit plan for the development of pools, under which each separate owner would receive his proportionate share of the oil and gas in a pool, as opposed to the present scramble in which each owner seeks to capture as much as fast as he can."

The number of such expressions might be expanded indefinitely; but it is unnecessary. Profoundly convinced that they represent the best and the preponderant judgment of the industry, I urge that, by unanimous voice, the Institute agree to the two principles I have presented. Let me re-state them:

1. That unit operations, which we have heretofore approved, should be practiced in all new developments, and introduced as fast as possible in old ones; and that we set up machinery to bring about the removal of any obstacle to this program, through state legislation.

2. That the owner of the surface is entitled only to his ratable share of the oil and gas in a common pool, and we will unite to seek to bring about acceptance of this principle in the laws of the oil producing states.

The World Looks Upon Us as Trustees for a Vital Resource

I am convinced, gentlemen, that we are going to have legislation, whether we will or not. Those who want better methods of producing oil should be permitted to use them; others should be compelled. The signs of the times make it plain that delay on our part will not be tolerated. An industry that has seen half its production under martial law, and all of it under the accusation of incompetence and profligacy, may well take stock of its future. It is no longer of any use to inveigh against governmental interference with business, or to denounce as revolutionists any who disagree with us. The country, the world, looks upon us as trustees for a vital resource. Our administration of that trust has not been satisfactory. If we are to retain our trusteeship, if we are to keep our hold on this industry, we must win back a public confidence that we have lost.

Commissioner Not in Accord With East Texas Management

Austin, Texas.—Lon A. Smith, member of the Railroad Commission of Texas, indicated last week that he is not in accord with Governor R. S. Sterling's past policy of arbitrarily reducing allowable production in the East Texas field. He stated that the commission has had no part in the recent per well allowable reductions since setting the figure at 165 barrels daily. Mr. Smith had been called into a conference with the governor and asked for an opinion on the cut.

"I have no opinion," he replied. "My construction of the law is that it permits any field, including East Texas, to produce as much oil as it can so long as actual physical waste does not occur."

Mr. Smith also said that the commission will make no effort to hold hearings or adopt proration orders for East Texas so long as the martial law rule is in force, and that Governor Sterling has not intimated when the military forces will be removed.

Oil and Gas Pipe Line Activities

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Work Started on Seven-Mile Crude Line in Stephens County

Breckenridge, Texas.—Construction work has been started by Red Eagle Oil Company, Ltd., on seven miles of two-inch pipe line to extend from its producing properties on the R. Q. Lee ranch in northeastern Stephens County to Caddo, where the company plans to install a small refinery in the event direct connection with a major pipe line company is not obtainable. This company has a settled production of about 90 barrels high gravity oil daily, and is ready to complete R. Q. Lee 4, which has been shut down on top of lime showing oil at 3129 feet. Headquarters of the company is located on the seventh floor of the Rives-Strong building, Los Angeles, and a field office is maintained in Texas.

Regauge Taken of Monroe And Richland Gas Fields

Shreveport.—The semi-annual regauge of the Monroe and Richland gas fields has just been completed by the minerals division of the Louisiana Conservation Commission which has issued the new production quotas for 831 gassers in the Monroe field of Ouachita, Morehouse and Union Parishes, and for the 254 gassers in the Richland Parish gas field.

The quotas allowed each well, it was pointed out, are applicable only when the working pressure of any well is not lowered below one-half of its rock pressure, except that when a well has a rock pressure below 100 pounds, a working pressure lower than 200 pounds is not permissable.

Quotas were also given for three gassers in East Carroll Parish and for one gasser in West Carroll Parish.

Concordia Parish appears with a quota for a gasser, United Gas Public Service Company's Saunders 3, Section 42-8-10, whose present pressure is 620 pounds as compared to former pressure of 616 pounds. The former open flow of this well was 28,000,000 feet and is now 28,182,000 feet. The per cent of withdrawal was set at 15. Two of the East Carroll Parish wells' pressure was set at 1060 pounds and the other at 415 pounds, while the West Carroll Parish gassers' pressure was placed at 1060 pounds. The average pressure in the Richland Parish field is 850 pounds, and it varies in the Monroe field 75 to 1020 pounds.

Western Gas Company Line Has High Peak Capacity

One of the principal reasons for the projection of the 290-mile extension from El Paso, Texas, to Cananea, Mexico, was the large immediate and potential market represented by copper mining and smelting companies. With the line now completed and in operation, the industrial consumers in Douglas and Bisbee (Arizona) and Cananea (Mexico) are assured of a plentiful supply of natural gas from the Lea County fields of Southeastern New Mexico.

While the new line ordinarily delivers about 33,000,000 cubic feet of gas daily, it has a capacity of 55,000,000 cubic feet with the existing equipment. Further, each of the compressor stations can be enlarged to accommodate eight compressor units, instead of three.

This flexibility in handling loads was made possible by the erection of two compressor stations on the El Paso Natural Gas Company's 16-inch line, and two stations on Western Gas Company's 12¾-inch extension. The line pipe, of course, has very a high yield point.

A total of 11 Cooper-Bessemer compressor units has been installed to date. There are three units at Station No. 1, which is located 72 miles from the gas field; three units at Station No. 2, which is 67 miles from the first; three units at Station No. 3, near Fort Bliss, Texas; and two units at Station No. 4, near Gage, New Mexico.

The normal working pressure of Stations No. 1 and 2 is 450 pounds (maximum being 500 pounds) and the capacity per 24 hours with a compression ratio of 2 is 21,900,000 cubic feet. At the same compression ratio, the normal pressure of Stations No. 3 and 4 is 625 pounds (maximum being 750 pounds) and the daily capacity is 21,400,000 cubic feet.

Bore and stroke of all the power cylinders is 19 x 24 inches. Bore and stroke of the compressor cylinders in the first two stations is 11 x 24 inches; while in the third and fourth stations it is 9½ x 24 inches. Though all the compressor units are rated 760 brake horsepower at 180 r.p.m., they are essentially the same in design as the 1000-horsepower, twin-tandem, double-acting gas engines which direct-drive compressor cylinders in a number of the very large compressor stations.

The adequacy of service which this Texas-Mexico line offers to its customers is an important factor in stabilizing fuel costs and encouraging extended operations.

Three Cooper-Bessemer units rated 760 B.H.P. at 180 r.p.m. in Western Gas Company Compressor station near Fort Bliss, Texas

Oil and Gas Pipe Line Activities

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Tape Wrapped Spirally Around Pipe Line

IN constructing its new eight-inch pipe line from East Houston station to Texas City on the Gulf Coast, The Texas Pipe Line Company made use of a novel idea and a new device in applying asphalt protective covering. The device is shown in one of the accompanying pictures.

This new way of wrapping the pipe will be herewith explained in a brief description of the whole procedure of the crew which applied the coating and lowered the pipe into the ditch.

The ditch having been dug ahead of this crew, and the pipe having been electrically welded and treated with a primer and left alongside the ditch, everything was in readiness for the work of the aforementioned crew.

Incidentally, The Texas Pipe Line Company awarded contract for construction of this line to N. A. Saigh Company of San Antonio, and placing of protective covering on the line and laying it into the ditch constituted part of the work of the latter concern.

Leading the crew which applied the coatings was a McCormick-Deering tractor equipped with a boom and winch and special equipment holding the pipe above the ground for application of the coatings; the pipe rested on a grooved wheel swinging off the boom, and the wheel held the pipe above the ground at a uniform height as it turned along under the pipe while the tractor moved forward.

Following immediately back of the tractor were three men who applied liquid, hot asphalt to the pipe. They in turn barely kept ahead of three men handling the special device by which black asphalt-saturated felt tape, eight inches wide, was wrapped spirally around the pipe. This tape was a special product of The Texas Company, made at its asphalt plant at Port Neches, Texas, and put up in the form of spools. The spool fitted onto a roller on the special device, and as each spool was used up it was replaced with another. After being placed properly on the wrapping device, the end of the spool was started around the pipe at the place where the previous spool had left off, and the wrapping of the new spool commenced.

The wrapping device, developed by Johns-Manville Company in conjunction with W-K-M. Company of Houston is more readily explained by the accompanying picture than in words. It consists of a cylindrical frame-work of iron bars, fitting around the pipe and clamped so as to stay around it, this framework being approximately two feet long, and having an outside diameter of about two feet, with the inside diameter conforming to the size of the pipe. Rollers along the inside diameter of the device rest against the pipe. These rollers were placed at such angles that when the wrapping device was rotated on the pipe the device moved forward along the pipe, wrapping the tape around the pipe as the device turned around and moved forward. The device was whirled around the pipe by three or four men who performed this operation by taking hold of handles projecting horizontally from the outer ends of the cylindrical framework.

Back of this group of men applying the asphalt tape covering there were three men who applied talc over the newly wrapped tape, two men holding opposite ends of a canvass strip about two feet wide, one on each side of the pipe, the cloth being immediately beneath the pipe, and being hurled up against the pipe repeatedly as a third man kept sufficient talc on the canvass for this powdering process.

Immediately behind the talc artists was a second tape winding machine, made and operated exactly like the first device of this kind just described. The black, asphalt-saturated felt tape which this second group of men applied was the final coating, although a man followed the second wrapping machine and effected thorough seals of the tape at those places where the transitions from one spool to another had resulted in flaws.

Finally, a second tractor equipped like the first one, previously described, followed the second tape wrapping machine, holding up the back portion of the pipe for all the mentioned operations, and as the crew moved forward, this second tractor lowered the pipe into the ditch.

All the above work was carried out with uninterrupted forward movement and progress was at the rapid rate of over two miles daily.

Action picture of special device used in wrapping asphalt tape spirally around pipe line. The spool of tape, which revolves with the framework of the wrapping device, is here shown passing around lower part of pipe. Rollers on which the apparatus turns around the pipe are visible in the picture

Personal Mention—Men You Know

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W. E. ("BUCK") WILLIAMS is general superintendent of the production department, Eastern Kentucky division, Swiss Oil Corporation now, but when he first "hired out" to the organization he didn't suppose the wells he had helped punch down to the two Wier sands in that mountainous area would ever be made to flow again after the flush had been taken.

W. E. Williams

But Eastern Kentucky wells have been made to flow again—by gas—and Buck, who lives at Martha, has had a prominent part in gas lift development in the region.

Buck Williams is a mountaineer. When times were "hot" in Eastern Kentucky, when men who had leases were compelled to guard leases and rigs with armed forces to prevent others from helping themselves to the rich finds, it took a mountain man to hold his own against all comers. But years have passed—times are peaceful now.

When August comes and leaves turn red in Buck's country it is time to begin trucking in the winter's provisions and supplies. Mountain roads are no place to be with a loaded truck when they are soaked with fall rains. Then things seem spooky on these mountain roads. On most every hill is located the private cemetery of old settlers. Through the mist of fall's dampness the marble markers appear as white robed guardians of the old wells.

Buck Williams likes horses—not the kind that wins glory on the turf, but the kind that can be hitched to a rod machine and directed by a movement or word now and then. He thinks a great deal of his lease teams; recently refused an offer of $1500 for one team. In Buck's country, where corn grows on the hillside for want of level spots, horses are worth something.

DR. W. T. THOM, JR., associate professor of geology at Princeton University lead an informal discussion of future reserves and consumption of coal, oil and gas before a meeting of Houston Geological Society held November 5 at the Lamar Hotel, Houston.

PAUL T. SEASHORE, general manager of Louisiana Land and Exploration Company, has moved from Houston and now is headquartered in the Whitney Bank building, New Orleans.

J. A. VICKERS, president of Vickers Petroleum Company and well known sportsman of Wichita, Kansas, is at home after spending five weeks in the hospital.

ELMER DAHLGREN, formerly with Indian Territory Illuminating Oil Company at Bartlesville, has been appointed office manager for the Oklahoma City proration committee.

S. O. WALKER, of Visalia, has been appointed a special investigator in the Southern California district office of the oil and gas supervisor. He was an appointee of Governor Rolph and will work with E. Huguenin at Los Angeles and under R. D. Bush, state oil and gas supervisor.

NORVAL WHITE, Pacific Coast representative of the American Petroleum Institute, left Los Angeles November 2 for Chicago to assist in completing arrangements for the annual meeting.

TOM J. CANNON; 59, owner of producing properties in the East Texas field, died suddenly at Tyler, Texas, November 6. Business associates have arranged for the shipment of the body to Long Beach, California, for burial, as it is reported that Cannon had no surviving relatives.

DANA HOGAN, formerly connected with Petroleum Securities Company and the Doheny interests in California, is visiting in Europe. He will return to the United States before Christmas.

ERNEST MARQUARDT, formerly vice president and chief geologist for New York Oil Company at Casper, Wyoming, is now manager of Municipal Bond Company at San Diego, California.

OSCAR SUTRO, vice president and general counsel of Standard Oil Company of California, has been spending some time in New York and other Eastern cities.

CARL BADEN, with Lago Petroleum Corporation in Maracaibo Basin, Venezuela, has returned to his duties after spending a vacation with relatives in Coffeyville, Kansas.

JOHN MONTGOMERY of Seminole is visiting relatives after spending two years in the service of Netherlands Colonial Petroleum Corporation in Sumatra.

JOHN MEYERS, sales manager for American Hammered Piston Ring Company, Baltimore, Maryland, was a business visitor in Tulsa during the past week. Mr. Meyers went from Tulsa to Fort Worth where he will spend a few days.

J. P. HUGHES, of Bucarest, general manager of Romana-Americana, Roumanian subsidiary of Standard Oil Company of New Jersey, is visiting the general headquarters of the company at New York.

H. G. SEIDEL and J. O. Mowinckel, of Paris, directors of Standard Oil Company of New Jersey are in the United States to attend the meeting of the American Petroleum Institute.

▼ PERSONAL MENTION—MEN YOU KNOW ▼

LEWIS TAYLOR ROBINSON, engineer in charge of the general engineering laboratory of General Electric Company, died suddenly from a heart attack at his home in Schenectady, November 3. He was 63 years old, and had been in generally good health.

Dr. Robinson was a veteran electrical technician, one of the widest known electrical engineers in the profession, and for 12 years the head of one of the principal laboratories of General Electric Company.

During recent years his activities in engineering and scientific bodies had been varied and constant, and the number of technical committees on which he had served in the past and of which he was a member at the time of his death was extremely large.

Dr. Robinson was born in Springfield, Massachusetts, October 20, 1868, the son of Charles Henry and Anna Adelaide (Brown) Robinson. He was educated in the public schools of Lynn and Reading, Massachusetts.

In 1885 Dr. Robinson started working for Thomson-Houston Electric Company, later coming under the direct guidance of its operating head, Professor Thomson. In 1891 he formed a partnership with George A. Whitmore in the establishment of a laboratory for the electrical testing and calibration of instruments. In 1893 Dr. Robinson joined the old Schuyler Electric Company at Middletown, Connecticut, afterwards acquired by General Electric Company. A year later he went with General Electric and Foundry Company and in 1896 he went to Schenectady to take charge of the standardizing laboratory of General Electric Company.

Dr. Robinson's career as an engineer became more and more influential in his new capacity as head of the engineering laboratory. This laboratory was constantly consulted by the various engineering departments of the company and was also engaged in much supplemental work for the research laboratory.

The laboratory established and maintained a complete set of electrical standards, while it also developed a number of important electrical devices, particularly the oscillograph, the mercury arc rectifier, and the nucleus of a talking motion piture. Dr. Robinson received more than 30 patents in the United States, especially in connection with his work as head of the laboratory, the earliest of these being granted even before he became identified with General Electric Company at Schenectady and bearing date of 1894.

Dr. Robinson in 1904 was awarded the silver medal of the St. Louis exposition as a collaborator in the electrical exhibit of the General Electric Company. In 1929 he received the honorary degree of doctor of science from Union College, as "inventor, engineer, musician," the citation of President Frank P. Day stating that Dr. Robinson had "materially contributed to the progress of the art through many valuable inventions and papers before learned societies."

Dr. Robinson's principal hobby was music. He had promoted and assisted the orchestra of the General Engineering Laboratory, of which he acted, on occasion, as conductor.

The societies of which he was a member included the American Institute of Electrical Engineers, in which he had been a vice president at different times, and in the Schenectady section of which he served as chairman in 1915-16; Society of Engineers of Eastern New York; American Physical Society; National Electric Light Association; American Association for the Advancement of Science; National Electrical Manufacturers' Association; United States committee of the International Electro-technical Commission, and American Standards Association.

Dr. Robinson leaves his widow, Mrs. Mary E. (Conner) Robinson, a daughter, Mrs. Dorothy R. Skolfield, a son, Lewis Robinson, and his mother, Mrs. Anna B. Robinson. Another son, Frank Robinson, died during the war.

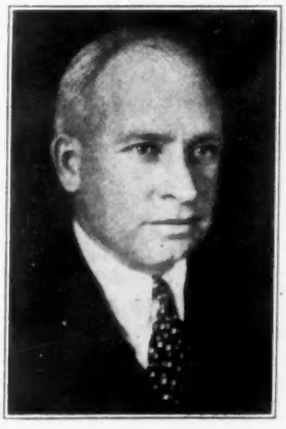
F. E. WISECUP, president of Red Eagle Oil Company, Ltd., with headquarters at Los Angeles, is in Texas completing negotiations for a market outlet to be provided for the company's producing properties in the Caddo field, Central West Texas.

D. C. MORROW of Tulsa has resigned as vice-president of Kirk-Morrow Iron Works Company, Iola, Kansas. Mr. Morrow formerly was president of United Iron Works in Kansas City.

E. C. HINKEFENT now is in charge of sales of Braden Steel Corporation, Tulsa, succeeding Raymond W. Mauthe.

L. L. LOOKABAUGH, in charge of production for the central division, Shell Petroleum Corporation, at Dallas, attended the school of geology and engineering at Oklahoma University from 1913 to 1917, then entered the service. After being discharged from the army, he obtained employment with Sinclair Oil & Refining Company in 1919. During the year he resigned from that connection to take a position with Choate Oil Corporation at Oklahoma City.

In 1921 Mr. Lookabaugh joined Roxana Petroleum Corporation, now Shell Petroleum Corporation, and has been with this organization without interruption to the present time. From 1921 to 1927 Mr. Lookabaugh did petroleum engineering work in various fields in Southern Oklahoma, North Central Texas and the Balcones fault region of East Central Texas. In 1927 he was made superintendent of production in charge of the Wichita Falls district. In 1928 he was promoted to the position of chief exploitation engineer for the central division with headquarters at Dallas. In October, 1930, he was given the additional responsibility of being in charge of production for the central division in which capacity he now serves.



L. L. LOOKABAUGH

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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Kettleman Northwest Flank Test Good for 28,000 Barrels

Coalinga, Calif.—Kettleman North Dome Association has completed No. 4-28J, a northwest flank test, with an initial production up to 28,000 barrels, but the flow has been reduced sharply through one small bean. This latest producer was completed at 8397 feet and is on a lease formerly held by Pacific Western Oil Company.

The well is on the northwest plunge of the North Dome and is an indirect offset to Superior Oil Company's Huffman producers. It is located structurally about the same as the Huffman wells and is on a lease which was at one time held to be of questionable value. During the first part of the test the producer flowed up to a rate of 30,000 barrels per day, but the reduction to one 40/64-inch bean brought the output down to around 9000 barrels. On the basis of its best performance, the new producer is the best yet completed on the North Dome. The gas flow was above 20,000,000 cubic feet through one small bean, but was estimated at 40,000,000 cubic feet with the full flow of oil. This is not a poor gas-oil ratio and falls well below the maximum established by the state. A string of 9⅝-inch casing was cemented over the Temblor formation at 6880 feet, but the liner was cemented through perforations to shut off the upper part of the sand which produces most of the gas.

The completion of Kettleman North Dome Association's No. 4-28J gives the extreme northwest tip of the North Dome one of the most unusual group of producers ever finished on edge leases in California. Superior Oil Company's Huffman lease was not a popular investment, but it has developed into one of the best tracts on the North Dome. It is plainly near the edge of the field, but the formations are ideal for the best production. All wells in this part of the field have been good producers and none has shown a high water cut when properly completed. The inside leases have not shown correspondingly larger initials, and the average has been even less than that of this edge group. The formations dip slightly on these leases, but this has done more good than harm to insure a full thickness below the Temblor shut-off. The several completions have been far enough apart to affect pressures very little.

Standard Oil Company continues to have hard luck with No. 65-29S, an offset to Superior Oil Company's Huffman producers. After overcoming a long series of mechnical difficulties the well was given a production test at 7885 feet. Swabbing brought a small amount of salt water, and the source of this water will have to be determined before any progress is made toward completion.

North American Oil Consolidated is coring ahead below 9050 feet in Blauvelt 1, an edge test on the east slope of the North Dome. Failure to find a good black oil sand above 9000 feet was not a surprise. A more favorable formation is expected below 9100 feet. Surface indications, a successful water shut-off over the Temblor and the usual tight zone below the shut-off are favorable indications and the well may make a record producer at some point around 9500 feet. The hole has two record strings of casing and a record for production is a distinct possibility.

Petroleum Securities Company is coring just above 9000 feet in Burbank 1, a Middle Dome test, but the outcome is still doubtful. The hard gray sand holds little promise, but a small producer is possible from the upper part of the formation below the last shutoff. Elimination of the Middle Dome would be a blow to the state's undeveloped theoretical potential.

Santa Fe Springs May See Revival of Field Activity

Los Angeles.—Santa Fe Springs is another field which should furnish a limited amount of field work in the form of repairing, plugging and redrilling of old wells. The tendency in this field is to plug back, rather than to drill deeper, due to the stability of the Meyer zone. Little field work of any kind has been started, but the better demand for the light oil produced here will make itself felt.

Several months ago a few wells were plugged back from the deeper zones to produce in the Meyer sand and made very successful recompletions. Drilling operations have declined to a single test, but the field has been almost as inactive for more than a year.

The Clarke zone was one of the least dependable of the four major sands found below the Meyer. The Nordstrum zone was a fair producer, but was small in extent. The Buckbee was a good producer, but too thin to hold up well. The O'Connell zone was perhaps the best producer below the Meyer. It was less extensive than either the Meyer or Clarke sand, but produced consistently. The Clarke zone was almost as extensive as the Meyer sand, but the edge leases failed to prove profitable, due to water and the expense of drilling to 8000 feet.

Ventura Avenue Field May Experience New Development

Ventura, Calif.—While development in the Ventura Avenue field has declined to a very low ebb, deep zone possibilities and the fact that drilling has not been intensive, place the field in line for increased activities when more oil is needed.

Associated Oil Company and Shell Oil Company hold most of the leases, and have developed the field in a sensible manner. Completion several months ago of a 5200-barrel well at 8823 feet by Associated Oil Company opened a hitherto suspected part of the Pliocene. A much shallower zone would have tempted the most conservative operator, but 9000-foot wells during periods of over-production are too much of a gamble to risk. An improvement within the industry should bring about moderate development of that portion of the producing zone which has seen little drilling in the past.

Associated Oil Company completed Lloyd 81 with an initial production of 1800 barrels from 7600 feet during the week. With only eight drilling wells, the field has not witnessed such quietness since the deep development started several years ago.

Unsuccessful Test Near Goleta Deepened from 4750-Foot Level

Santa Barbara, Calif.—Ohio Oil Company is deepening Oakley 1, a wildcat near Goleta, from 4780 feet, following an unsuccessful swabbing test to develop gas from a zone between 4500 feet and the former bottom. The well is now drilling at 5300 feet. An attempt is being made to extend the producing limits of the gas field opened along the coast.

General Petroleum Corporation has placed More 3 in condition for a continuation of tests of the upper showings. This well was drilled at 6912 feet, but plugged back to 5362 feet. A good gas production was obtained above 5000 feet.

California Proration Schedule November, 1931

	Potential Barrels Daily	Allotment Barrels Daily	Per Cent Curtailment
San Joaquin Valley—			
Belridge	19,400	8,500	56.19
Coalinga	33,110	8,000	75.84
Elk Hills	27,470	12,800	53.40
Fruitvale	7,360	2,250	69.43
Kern Front	15,950	7,400	53.60
Kern River	11,440	2,700	76.40
Kettleman Hills	190,300	60,000	68.47
Lost Hills	5,090	800	84.28
McKittrick	4,420	2,400	45.70
Midway-Maricopa	98,100	52,000	46.99
Mount Poso	19,375	8,500	56.13
Round Mountain	13,470	1,000	92.58
Wheeler Ridge	550	550	....
Other Fields	65[1]	.....	100.00
Total	446,100	166,900	62.58
Coastal District—			
Capitain	1,400	....	100.00
Elwood	29,000[2]	26,000	10.34
Rincon	2,170	1,700	21.66
San Miguelito	915	.....	100.00
Santa Barbara	450	200	55.56
Santa Maria	13,300	2,750	79.32
Summerland	240	200	16.67
Ventura Avenue	91,175	40,000	56.13
Ventura-Newhall	5,800	3,500	39.66
Watsonville	50	50	....
Total	144,500	74,400	48.51
Los Angeles Basin—			
Alamitos Heights	4,400	3,000	31.82
Brea-Olinda	20,090	9,500	52.71
Dominguez	15,050	11,500	23.59
East Coyote	3,225	2,000	37.98
Huntington Beach	43,550	20,000	54.08
Inglewood	19,650	14,400	26.72
Lawndale	475	350	26.32
Long Beach	109,100	71,000	34.92
Los Angeles	1,150	1,150	....
Montebello	8,085	6,500	19.60
Playa Del Rey	36,430	16,500	54.71
Potrero	2,450	1,400	42.86
Richfield	12,985	6,600	49.17
Rosecrans	6,300	3,350	46.82
Santa Fe Springs	112,950	53,500	52.63
Seal Beach	19,360	9,900	48.86
Torrance	11,400[3]	5,750	49.56
West Coyote	12,880	8,500	34.01
Whittier	1,370	1,300	5.11
Total	440,900	246,200	44.16
Grand Total	1,031,500	487,500	52.74

Notes—(1)—Includes Mountain View and Devils Den.
(2)—Does not include Sespe potential.
(3)—Includes Hermosa Beach.
The November State potential of 1,031,400 barrels daily shows a decline of 44,600 barrels daily from the October potential of 1,076,000 barrels.

Development of Deep Zone At Dominguez Is Important

Los Angeles, Calif.—Development of the deep zone at Dominguez will prove an important addition to the crude supply of the Los Angeles basin, but Shell Oil Company, Union Oil Company and Associated Oil Company have no intention of entering into a competitive campaign in the field.

Land owners have been partially responsible for the increased activity. Union Oil Company has started another well, Hellman 17, giving the company five active tests in the field. Shell Oil Company is drilling two wells, but has been reluctant to become more active than absolutely necessary. Associated Oil Company is not anxious to develop its holdings further, but may do more drilling.

Wells are being drilled quicker and with less expense here than has even been done in a major Los Angeles basin field. Improved technique, picked crews, close supervision and other factors are responsible for the smaller cost per foot of the 4600-foot completions. The few wells deepened have also been put down with a record low cost for development below 4000 feet.

Dominguez has been closely held and developed by these three companies. Gas was injected for two or three years, but the wisdom of this policy has often been questioned. It might have been a complete success, had all three companies entered into a common agreement.

Series of Tests on Deep Well In Lost Hills Disappointing

Bakersfield, Calif.—A long series of tests in Lincoln Petroleum Company's Theta 1A, a deep test in the Lost Hills field, has proved a severe jolt to the adherents of the theory that the lower zone should rival those found at North Belridge and Kettleman Hills. This well was drilled to 5329 feet and has been tested enough to make its status very doubtful. The hole was cleaned out to bottom and bailed down to 4800 feet, but fluid of any description failed to enter the hole in appreciable quantities. An examination of the cores taken below the final water shutoff showed a formation which seemed to have little life, even if no water. A well completed in another field in a similar sand was completed with a production of 20 barrels. It is difficult to compare Theta 1A with wells in other fields, but only a small production at best is expected from the present depth.

The Lost Hills field lies exactly in line with the South Dome at Kettleman Hills, but there may be no direct connection between the two districts. The base surface on which the more recent deposits were made at Lost Hills was apparently higher than at Kettleman Hills, although the position of the field might indicate a thicker fill at Lost Hills.

Sespe Formation Threat in Elwood Field is Removed

Santa Barbara, Calif.—Decision to withhold development of the Sespe formation at Elwood has relieved the tension where a threat of over-production existed before the agreement to suspend operations was reached. Proof that the deeper Sespe zone will be a factor was viewed with alarm, but Barnsdall Oil Company, Pacific Western Oil Company and the smaller operators agreed to postpone development.

The Vaqueros zone, the shallower formation that has been one of the most productive thin sands ever developed

in California, is now producing 24,000 barrels from 24 wells, as against a slightly higher potential. Most of the producers are on gas lift, the high average per well being accounted for by the fact that the Vaqueros sand supplies a very high fluid level that is ideal for compressor operations. . Although a thin zone, the porosity of the sand is such that the fluid is easily obtained. It was largely for this reason that the operators were able to establish 12,000-barrel well potentials where 3000 barrels would have been a fair average.

Barnsdall Oil Company and Rio Grande Oil Company, joint operators, have abandoned Bishop-Evans 1, an outpost test, at 6730 feet. The Vaqueros was dry, but the Sespe yielded showings which fell short of commercial production.

Resumption of Field Activity At Long Beach Is Anticipated

Long Beach, Calif.—A gradual resumption of field operations in the Long Beach field is expected, with plugging, deepening and repairing of wells to lead the way to more development from the surface. The need for more oil is being anticipated, even if not actually felt, and the average small operator is considering ways and means of increasing his production. Deepening, plugging and repairing of old producers represents the smallest outlay, but when this is done the next alternative is drilling from the surface.

The field has been so well developed, however, that the number of new wells will be measured only by market demands and the success of deepening operations. The field already has too many producing wells and only an acute need for oil would prompt the drilling of the remaining locations.

The Los Cerritos extension has not furnished many good producers below 8000 feet, and the average operator will think twice before starting wells from the surface. The drilling of new wells will be done by the larger operators who need a steady production over a long period.

South Belridge Deep Test Now Drilling at 7200 Feet

Bakersfield, Calif.—General Petroleum Corporation is drilling at 7200 feet in Berry 1, a deep test in the South Belridge field, and the outlook is beginning to look somewhat doubtful. The Temblor formation does not seem as dependable to the south as toward the north, but deeper production is still a possibility. This is the first well ever drilled to such a depth in the main Belridge field. The rig and equipment are of the latest type and many difficulties have been overcome.

Belridge Oil Company placed No. 49-35, a North Belridge test, on production a second time at 5595 feet, but the flow of 4000 barrels showed a water cut of more than 65 per cent and the well has been killed again to locate the water. This well came in with a larger volume than expected, but the high percentage of water was also a surprise. It offsets two small producers which showed only a small amount of water.

Los Angeles.—Union Oil Company has purchased one-half of an undivided interest in Belmont Investment Company's interests on the North Dome at Kettleman Hills. This includes the southwest quarter of Section 32-21-17 and the E½E½W½ of Section 24-21-16.

Pacific Coast Geologists Told South Dome Is Non-Productive

Los Angeles.—The eighth annual meeting of the Pacific Coast section of the American Association of Petroleum Geologists was held November 5 and 6 at the Biltmore Hotel. The attendance approached a record for the Western section. The Pacific section of the Society of Economic Paleontologists and Mineralogists met in connection with the geologists. The meeting covered the broader aspect of geology and did not carry as many papers which applied to specific conditions in a smaller given area as has been done in the past.

Officers elected for the ensuing year were Carroll M. Wagner, chief geologist for General Petroleum Corporation, president; and Herschell L. Driver, paleontologist for Standard Oil Company of California, secretary.

One of the most interesting papers was "The Problem of the Area of the Lost Hills and South Dome of Kettleman Hills, San Joaquin Valley," by Harold M. Horton. One of the most interesting conclusions was that the South Dome is structurally merely the northwest end of Lost Hills. This indicates the non-productivity of the South Dome.

Most of the papers were technical and were of general interest to the geologist, rather than to the field man. Other papers were:

"Periods of Folding in the Temblor Range, Kern County, California," by Gerard Henny.

"Some Structural and Commercial Oil and Gas Possibilities of California's Central Valley Region," by Walter Stalder.

"A Few Suggestions Concerning Methods of Developing Geologic Structure Sections from Surface Data and Their Relation to Subsurface Structure in a Few California Fields," by J. W. E. Hanes and Bruce Seymour.

"Limitation of Ground Water as an Aid in Determination of Hidden Geologic Structures," by E. K. Soper.

"The Stratigraphy of the Santa Marie District," by L. M. Clark.

"The Structural History and Development of Santa Maria and Lompoc Fields," by Francis F. Bowman, Jr.

"Structural History of Santa Barbara-Ventura Basin, with Brief Discussion of Faulting and the Origin of the Vaqueros and Sespe Oil," by W. E. James.

"Problems in Miocene Correlation," by R. D. Reed.

"The Geology of the Simi Oil Field, Ventura County, California," by Thomas F. Stipp.

"Structural Features of the Seal Beach Oil Field," by Glenn H. Bowes.

Olap P. Jenkins talked for five minutes on "Progress of Geologic Branch of the California State Division of Mines."

The Pacific section of the Economic Paleontologists and Mineralogists was held Thursday evening. The dinner was followed by a paper on "Correlation of the California Lower Miocene," by W. H. Corey.

Standard of California Net Is Lower for Third Quarter

San Francisco Calif.—Standard Oil Company of California has reported net earning of $6,297,819.23 for the third quarter of 1931, as compared with $10,717,038.67 during the corresponding period of 1930. The net earnings for the nine months totaled $11,941,787, as compared with $30,435,563.23 for the corresponding period of 1930. The period for the present year has had the correct proportion of inventory revaluation charged against it.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

Oklahoma City Pool Divided Into Four Producing Zones

Oklahoma City—Geology took its place alongside engineering in proration of the Oklahoma City pool, Saturday, November 7, when the corporation commission handed down an order dividing that pool into four producing zones and fixed allowable production for each. This is perhaps one of the most important decisions ever rendered on the basis of geological evidence alone in connection with an oil field and is the first time an Oklahoma field has ever been legally divided into zones.

First effort to initiate such a plan was made on May 22, 1931, when Wirt Franklin petitioned the commission for such a division. Testimony was introduced to show that the pool could be carefully divided into zones by geological determinations; that such a division was necessary in order that proration be placed on an equitable basis for operators in different portions of the pool. It was shown that water conditions in the entire Arbuckle horizon and parts of the Lower Simpson, were at a stage where it was no longer doubtful that severe damage was being done but also that there was great likelihood that the prolific Wilcox sand might be injured by migration of water through wells that had penetrated through Wilcox into the Simpson and Arbuckle horizons below.

Opponents of the plan claimed that the pool could not be clearly divided into zones and that oil was being produced from a common source. Subsequently Indian Territory Illuminating Oil Company petitioned for the right to produce Arbuckle limestone wells to full capacity. The petition filed by the state-wide committee through Wirt Franklin, its chairman, proposed to allow Arbuckle limestone wells 75 per cent of their potential, lower Simpson sand wells, 10 per cent of potential, the north Wilcox area three per cent, and the south Wilcox 10 per cent.

In handing down the new order the commission stated in part as follows:

"Testimony taken before the commission shows conclusively that water encroachment in the Simpson sand siliceous lime area has reached a stage where grave and serious damage already has resulted when viewed from the standpoint of ultimate possible recovery from these two producing horizons."

"It is further shown that unless some action is taken to prevent, further serious and irreparable damage will be done to these two sands. It is further shown that the encroachment of water, as disclosed by the evidence, even threatens that very prolific production found in the Wilcox sand, particularly owing to the fact that a number of wells have been drilled through the Wilcox sand into the lower sands which are now producing water."

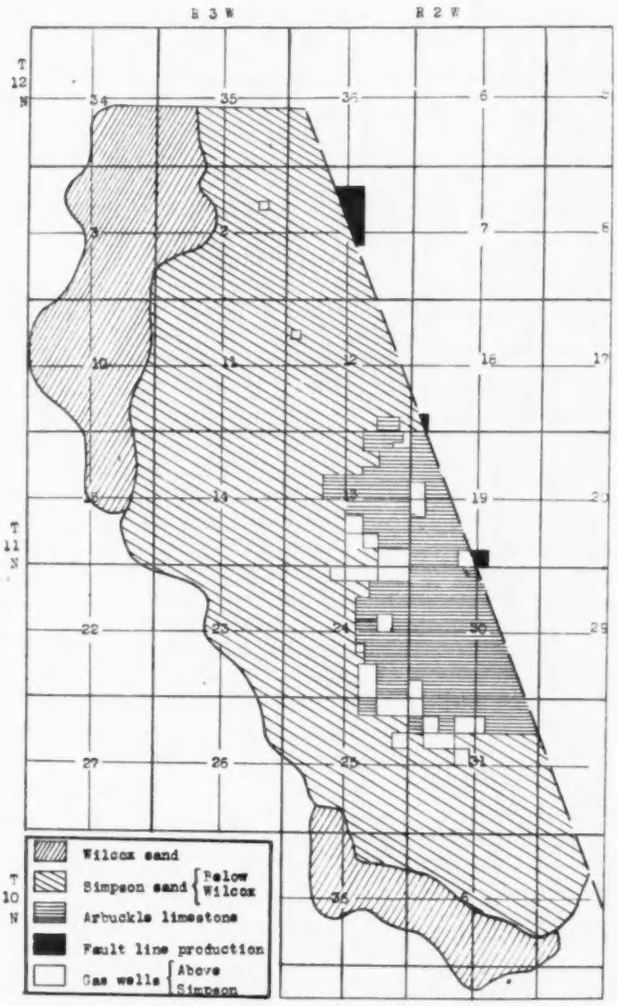
"It is shown that some of the wells when opened October 10 after a shut-down from August 5 under military rule, failed to produce anything except water and there is grave doubt as to whether or not some of the wells may ever be brought back to production of substantial amounts of crude oil."

In substance the order of November 7 is as follows:

Each of the four zones is defined as a separate source of production with no distinction being made between Wilcox sand production in the northern and southern portions of the pool, as was claimed in the petition. Order number 5654 which was handed down October 31 and was to have governed the pool for November and December, was amended to read as follows:

"All wells in the Oklahoma City pool, not illegally overproduced and which have served their 65-day shut-in period and shut in time on account of the initial test, and which have had their potentials determined since 7:00 o'clock a. m., October 10, 1931, shall be permitted to produce 4.5 per cent of their potential production from and after 7:00 o'clock a. m., November 1, 1931, until December 1, 1931, at 7:00 a. m. and from December 1, 1931, at 7:00 a. m. to January 1, 1932, at 7:00 o'clock a. m. and/or until otherwise ordered by the commission, less any permitted over-production."

"That in addition to the amount of production allowed



Showing geological zones by which Oklahoma City pool is to be prorated.

under paragraph 13 of the said order Number 5654, (as shown above) each siliceous lime well in the Oklahoma City field shall be permitted to produce during the period 7:00 a. m., November 1, 1931, to 7:00 a. m., January 1, 1932, 250 barrels of oil per day."

In addition to the 4.5 per cent allowed under paragraph 13, each eligible Simpson below Wilcox oil well which does not have a potential in excess of 2000 barrels per day and which makes three per cent or more water per day, shall be allowed 200 barrels per day. Any Simpson below Wilcox well not now making three per cent or more water per day will be allowed the 200 barrels per day additional as soon as the operator of the well gives written notice that water production has increased to three per cent or more per day.

Order Number 5654 provided for a daily allowable production of 180,000 barrels, with 18,000 barrels per day reserved for under-produced wells. It is estimated that total increased production from water wells will be about 26,200 barrels per day leaving a total of approximately 135,800 barrels per day to be allocated among the non-water wells.

Oklahoma Commission Sets Date For Hearing on Proration Rules

Oklahoma City.—The Oklahoma Corporation Commission has set December 8 as a date for a hearing out of which additional rules and regulations for the enforcing of proration and the taking of potential production in prorated fields will be written. Most of the questions set down for hearing grew out of evidence and petitions before the body when it held a hearing October 26 to determine the output of prorated fields. At that time the commission decided that it did not have sufficient time to consider the changes proposed.

The proposals on which the hearing of December 8 will be held were listed by the commission as follows:

"1. A rule requiring all producing wells, where necessary to be equipped with chokes, or flow beans or adjustable flow regulating devices . . . and so equipped as to permit the sealing or locking of all outlets from the well.

"2. A rule, the purpose and extent of which will be the adjustment of potentials taken of wells using different diameters of casing and for the purpose of prevention of unfairness resulting from the determination of a potential by open flow through larger sized casing as against open flow through a smaller sized casing.

"3. A rule requiring the re-conditioning of wells which have penetrated one or more producing formations below the Wilcox sand and which have the Wilcox sand exposed by requiring the casing off of the Wilcox sand or the plugging off of the producing formations below the Wilcox.

"4. A rule changing the method of proration in the Oklahoma City field from a wells basis to a lease basis.

"5. A rule looking to the regulation and establishing the method and manner of producing oil wells, which wells produce water, to the end that the producing oil sands may be protected from the destruction by water and waste thus prevented.

"6. A rule establishing a fair, equitable oil and gas ratio as between production of oil and gas from wells producing both oil and gas, for the purpose of conserving gas energy and thereby increasing the ultimate recovery of oil and the prevention of waste of casinghead gas or dry gas.

"7. Other rules looking to the conservation of crude petroleum or natural gas within the Oklahoma City field in the state of Oklahoma, and for the prevention of waste thereof, as may be submitted to the commission for its consideration."

Ellsworth Arch Area of Central Kansas Becoming More Important

Wichita, Kansas.—The Ellsworth Arch area of central western Kansas moved a step nearer becoming an important producing area when Hinkle and Palmer's Phelan 1, SEc Section 2-17s-10w, found oil in the Arbuckle or Siliceous limestone. Top of the conglomerate was encountered at 3272 feet and top of the Arbuckle at 3309 feet. At 3318 to 3320 feet the hole filled 200 feet with oil but at 3340 feet there were 700 feet of oil in the hole and only a small increase in the amount of oil at 3332 feet. Despite this relatively poor showing it probably will make a small producer and it is not a condemnation of the area as a whole.

Nearest production is in the Aylward et al's Stratman 1, SE NW SE Section 1-17s-10w, approximately three-fourths of a mile east. The Phelan 1 is 28 feet structurally lower on top of the conglomerate and 48 feet lower on top of the Arbuckle. Stratman 1, was originally completed on April 14, 1931, swabbing 207 barrels in two hours and shutting in because of no outlet. Swabbed last week it yielded 769 barrels in seven hours and the fluid level was lowered only about 800 feet below the surface.

Both the Phelan and Stratman are located approximately midway between Palmer and Gypsy's Stoddenberg 1, CSW Section 22-16s-10w, a 1200-barrel well, and Ainsworth et al's Heiken 1, NWc Section 25-17s-10w, estimated at 2000 barrels initial. Present information indicates that production will be obtained over a large part of the Ellsworth Arch but that accumulation is in several superimposed structures rather than continuous. The Stratman and Phelan wells apparently are in a saddle between two more prolific areas.

Charles Hilligos et al's Isern 1, CSW SE NE Section 12-20s-11w, about three miles northwest of the Schurr-Raymond pool, was deepened during the week from 3315 to 3328 feet with a small increase in production. At 3321 feet operators swabbed 142 barrels in five hours and lowered the fluid to within 800 feet of bottom. At 3328 feet the swab failed to lower the column more than 1200 feet from bottom, the increase having occurred at 3321 to 3326 feet. Stanolind Crude Oil Purchasing Company has laid a four-inch line from Schurr and will take the oil.

Alladin et al's No. 1, CSE SW NW Section 22-16s-10w, cored Kansas City limestone at 3008 feet and was drilling ahead below 3025 feet when last reported. Arbuckle limestone is expected at about 3300 feet. This is an important test since it is located only three full locations north of Gypsy and Palmer's Stoddenberg 1, a 1200-barrel well in the Arbuckle.

Schurr Pool

Slick, Pryor and Lockhart's Schurr 3, NW NE SW Section 21-20s-10w, most recent addition to the list of producers in the Schurr-Raymond pool, pumped 1540 barrels in 23¼ hours during the past week. Production is coming from Arbuckle limestone at 3317 to 3336 feet. Gravity of the oil is 43.6 degrees.

Midwest Exploration Company's Richardson 1, SE SE SE Section 36-22s-12w, approximately 15 miles southwest of the Schurr pool, in Stafford County, was given an outlet by Stanolind Crude Oil Purchasing Company and started producing last week after being shut in since its completion on January 7, 1931. An incompleted gauge at the time of completion indicated initial production of about 1200 barrels daily and the well is understood to be making this amount on the pump.

Continental Oil Company has started drilling at its Black 1, SW SW SW Section 9-25s-1e, and Casey 1, SW SW NW

Section 15-25s-1e, in the old Goodrich pool in Sedgwick County. Locations were announced several weeks ago shortly after the company's Black 1, SW SE NW Section 16-16-25s-1e, had been deepened from chat horizon at about 3000 feet to Viola limestone at 3334 to 3337 feet, where it swabbed 327 barrels in 20 hours. Success of the two new starts likely will precipitate a reworking of the few wells in the pool and the drilling of quite a number of new wells.

Eastborough Pool

Six wells are now being drilled in the Eastborough pool in Sedgwick County. This spurt in activity is occasioned by the drilling deeper of several wells in the northern portion of the pool where production from the chat horizon has turned largely to water. Derby Oil Company was the first to obtain Wilcox production in that portion of the pool, when it deepened one of its Eastborough Estates wells several weeks ago. A general deepening campaign probably will be carried on until production limits in the Wilcox sand are defined. This may or may not coincide with the structure as defined on top of the chat.

A. M. Scroggin's Wall 1, SE SW NE Section 4-28s-1e, at the south edge of Wichita, was drilling below 2700 feet.

Ritz-Decker-Garrett Area Produces Less Than Quota

Wichita, Kansas.—Production in the Ritz-Decker-Garrett area of McPherson County averaged 17,110 barrels daily for the week ending Saturday, November 7, or an average of 390 barrels less than allowable production authorized in the order of October 31.

Following a hearing held in Wichita on October 28, the Public Service Commission set a daily allowable of 17,500 barrels, allocating 5500 barrels to the chat producers and 12,000 barrels for wells producing from the Viola limestone. This amounts to 13.20 per cent of the chat potential and 19 per cent of the Viola lime potential.

Total pipe line runs for October were 421,149 barrels or a daily average of 13,585 barrels. This was slightly in excess of allowable production for the period. Of this amount 183,207 barrels were from chat producing properties and 237,942 barrels from the Viola limestone. At the beginning of November there were 55 Viola lime wells and 54 chat wells on the production list.

Seminole District Expected To Exceed Estimated Potential

Seminole, Oklahoma.—No production reports had been made available at the end of the week but it is understood that the Seminole district is holding well up on its potential gauges and expected to slightly exceed the potential estimated by decline curves. The gauging period, which commenced November 1 will extend to November 27, at which time 10-day full production records will be obtained for all of the major pools of the group.

Gypsy Oil Company announced location McNevins 2, NE NE SW Section 5-8n-9e, about three miles northwest of the town of Yeager where it has had gas production for some time.

Carter County Location North Of Tatums Pool Is Announced

Ardmore, Oklahoma.—Paul Turner of Duncan announced location for Carter 1, SW SW NW Section 13-1s-3w, one-half mile north of production in the Tatums pool in Carter County. The Tatums pool, although not fully defined, has been without an active location since the latter part of August, when Carter Oil Company completed its Franklin 4 for 2330 barrels initial production.

Charles Van Vleck was drilling below 550 feet in his Sherdon 1, CNE SE NW Section 14-8s-2w, 1½ miles northeast of Jimtown in southwestern Love County. The test is scheduled to go to 2500 feet and is being drilled with a coring machine. This area is overlain by rocks of lower Cretaceous age concealing the attitude of the underlying Pennsylvanian.

Oklahoma City Production Averages 189,130 Barrels

Oklahoma City.—Daily average production for the Oklahoma City pool for the week ending Saturday, November 7, was 189,130 barrels, or an excess of 9130 barrels over allowable production. This was occasioned by the taking of four-hour potential gauges on a large number of wells. On November 6, production soared to 319,746 barrels from 122 wells. At that time it is understood that potential gauges had been completed on about 75 wells and a decline of more than 10 per cent was indicated for some of the wells. This however, probably will not be representative of the entire field and most certainly does not indicate what to expect from the Wilcox sand. Decline in this horizon should be exceptionally low since it has been allowed to produce only a small part of the time since being discovered.

The records of one large independent producer show that with a total of 28 wells and a total number of days from completion to August 1, 1931, of 9515 days, the wells have actually produced a total of only about 379 days, or an average of less than .03 of the total time that has elapsed since completion.

Plains Petroleum Company completed its Baum 1, SE SE SE Section 15-11n-3w, flowing 4903 barrels in four hours from Wilcox sand at 6375 to 6530 feet. Gas is estimated at 25,000,000 cubic feet.

Kessler Oil & Gas Company's Canning 1, CE½ SE SE SE Section 22-11n-3w, set seven-inch casing at 6438 feet after penetrating Wilcox sand from 6457 to 6492 feet. It is now waiting on cement to set and should be ready to drill plug late in the coming week. This test is exceptionally interesting because it is a west offset to Phillips and Shell's Egermier 1, SW SW SW Section 23-11n-3w, which was completed for a potential of approximately 20,000 barrels during the latter part of July, 1931. It was the first Wilcox sand producer in that sector of the pool and the Canning 1 will be the second to test that horizon.

Tulsa.—The seventeenth annual meeting of the American Association of Petroleum Geologists will be held at Oklahoma City, March 24-25-26, 1932. The Biltmore Hotel has been selected as convention headquarters. The Oklahoma City Geological Society is arranging entertainment for the meeting. The Society of Economic Paleontologists and Mineralogists, a technical division of the association, will hold a concurrent meeting. Special entertainment and a technical program are being arranged.

Bridger, Mont.—Ohio Oil Company has started an interesting wildcat well on the Golden Dome structure, in Carbon County, Southern Montana. The structure lies immediately to the east of the Dry Creek field, and if conditions prove similar Golden Dome will add materially to the value of the new territory in this part of the state. The Dry Creek field has been proved both for gas and for high grade Petroleum. It is mainly controlled by Ohio Oil Company, which drilled the discovery well.

▼ NEW MEXICO-ROCKY MOUNTAIN AREA ▼

Hobbs October Production Was 36,552 Barrels Daily

Hobbs, New Mexico.—Production in the Hobbs field, which is the only important area in the Southwest operating under proration that has adhered to the original plan, amounted to 1,133,102 barrels, or a daily average of 36,552 barrels during October, according to figures compiled by C. G. Staley, umpire. The combination acreage-potential plan of proration was applied to this field July 10, 1930, and since the latter date the 19 participating companies have produced 16,194,282 barrels. About 2,500,000 barrels was produced prior to the inauguration of proration. The field lacked 14,650 barrels of producing its allowable during October because of owners of wells making sulphur water on the west flank having under produced to avoid cut oil.

Completion of two more producers on the east central portion of the Hobbs field were due early this week. Continental Oil Company's State 4-A, Section 33-18s-38e, was drilling cement plug at 3922 feet, and Gypsy Oil Company's W. D. Grimes "East" 1, an east offset, was running tubing to test usual lime horizon at 3975-4140 feet. The former's State 5-A has cemented 9⅝-inch pipe at 2755 feet, and is also scheduled to be completed within a few weeks.

Discovery of Another Gas Field In Central Wyoming Is Indicated

Casper, Wyo.—Discovery of another gas field in Central Wyoming was indicated last week when the wildcat well of Ward Oil & Gas Company on the Dutton Basin structure, Fremont County, blew in unexpectedly in the top of the second Wall Creek sand with a production estimated at better than 10,000,000 feet of gas before the well bridged and control head was installed. The gas is to be shut off so that the test may be drilled in a little deeper from 2530 feet, it being evident that deeper drilling will probably improve the production materially.

The new district is about 60 miles due west of Casper, and is only 10 or 12 miles east of the Muskrat gas field, which was discovered about three years ago. The Ward family has been working intermittently at its test for the last 14 years. Location of the new structure is such as to make it available to New York Oil Company's long gas pipe line from the Sand Draw field across Wyoming to cities and towns in Western Nebraska.

No More Completions Recorded For Greasewood Dome, Colorado

Denver, Colo.—Although they have been expected for more than two weeks, there have been no more completions on Greasewood dome, in Weld County, Northeastern Colorado. It was expected that Reiter-Foster Oil Corporation's Johnson-Juhl 1, one-half mile to the west of Continental Oil Company's Briggs 1, the nearest producer, would have been completed surely by this time, but on November 6 the well still stood at an unannounced depth and whether it was showing anything or not could not be ascertained. No scouts were admitted to the well, and while the total depth is reported to be about 6669 feet, whether the hole is bottomed in sand or not is not known. The well, when it is completed, should contribute important knowledge about the trend of the structure.

Continental Oil Company's well, which has been held up so long by a bad fishing job, has recovered all of the cable and is now fishing for the bit, a task which is proving difficult.

Loading racks are being built at Hardin, on the Union Pacific railroad, to accommodate Continental Oil Company's production in the field. A pipe line is to be laid at once from the field to Hardin, whence the crude is to be shipped to the Denver refinery.

In Morgan County the interesting test of Colorado Associated Oil Company, which is reported to have found such satisfactory saturation in the Dakotah sand, is now standing with 8⅝-inch special seamless casing cemented, total depth 5841 feet. Outcome of the test of this sand, which has hitherto been untested in the new district, is awaited with keen interest by all operators and prospective operators in the district.

Midwest to Drill Geary Dome Well Below 5377-Foot Level

Casper, Wyo.—Interesting news was announced here last week by George H. Jaques, vice president and general manager of Midwest Refining Company, concerning his company's immediate intention of drilling its Geary dome well deeper from 5377 feet, where it has been standing while the company drilled the Midway dome well to the Sundance, plugged back to test the Muddy production without much success, and finally started to complete the well in its original producing sand, the second Frontier. The Geary well will now be carried through all possible producing sands, and at the same time the company and its affiliated interests will drill a test on the North Geary, or Middle dome, structure. The last named, it is believed by many operators, has best chances for big production.

Midway dome lies 12 miles directly north of Casper, Middle dome is about nine miles northeast, and Geary dome is 12 miles almost directly east.

Craig, Colo.—A test for gas production is to be drilled on the Craig structure, four miles south of the town of Craig, by Ohio Oil Company; and material and equipment are being moved in so that work may be started immediately. If and when gas production is developed, it is to be used to supply the domestic and industrial requirements of Craig, which has granted a franchise to Ohio Oil Company.

Increased Drilling for Gas Is Likely in California

Los Angeles.—In miscellaneous California districts where drilling has been done chiefly for natural gas, increased drilling will take place if the supply of gas in the flush fields declines. The Buttonwillow district was for years one of the few gas fields in California, and it remains today a useful addition to oil fields which furnish most of the natural gas for the state. Milham Exploration Company is the principal operator in this district and is considering the deepening of additonal wells.

Fullerton Oil Company will drill a series of core holes in the Semitropic district, the first test to be located on Section 25-27-23.

In the Goleta district Ohio Oil Company is attempting to extend the gas field discovered some time ago along the coast line. Oakley 1 was tested this week at 4781 feet but failed to make a satisfactory showing. It will be deepened. General Petroleum Corporation has suspended operations in More 3, a deep test which produced a large flow of natural gas above 5000 feet.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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East Texas Edge Lease Wells Requiring Pumping Equipment

Longview, Texas.—Overstepping of the deadline for prolific production in the East Texas field by operators holding edge leases is stimulating the demand for well pumping equipment. Gradual lowering of the reservoir pressure is beginning to terminate the flowing life of wells in the northeast section of the field, and a number of old wells are now being made ready to go on the beam. Until recently the Longview area, comprising that portion of the field lying north of the Sabine River, was without a pumper, but recent completions have included a number of very small wells on the outer rim.

Arkansas Fuel Oil Company's G. A. Castleberry 2, an east offset to a temporary abandoned failure drilled by Columbia Oil & Gas Company on a 14-acre lease out of the same farm, is to be placed on the pump with prospects of a 150-barrel producer from broken sand and shale at 3666-72 feet after drilling into Georgetown lime at 3689 feet, with a surface elevation of 423 feet. Poor showings made by these two east edge tests in the D. Sanches Survey has resulted in a half dozen locations being held up.

Humble Oil & Refining Company's L. T. Mackey 1, located on 95-acre lease in the S. Harrell Survey, and on the northwest edge of the field in Upshur County swabbed dry when tested in Woodbine sand at 3636-47 feet. This well may be placed on the pump rather than to deepen to the water level as a final effort to develop flowing production. Johnson et al's John Hargraves 1, located in the southeast corner of 50-acre lease in the western part of the M. Mann Survey, flowed 500 barrels oil during first seven hours on open tubing test from sand at 3709-12 feet, or a sub sea depth of 3306 feet.

Flanagan Production Company's Walker 1, located southwest of Gladewater and on the west bank of the Sabine River, is preparing to pump after having encountered difficulty in flowing its proration quota because of low pressure and considerable paraffin. Stanolind Oil & Gas Company and Simms Oil Company's A. W. Miller 1, located between the above well and two held by The Texas Company on the Walker land, drilled into water at 3607-09 feet after showing for a small producer at 3585-86 and 3595-96 feet. The lower sand failed to carry any appreciable amount of production. Miller 1 was drilled to a sub-sea depth of 3335 feet, and is being plugged back in hope of developing a pumper.

Derricks on piles will be installed by Tidal Oil Company and Wm. Kistler in developing their Lake Devernia lease in northwestern Gregg County. Location for Number 2 on this lease will fall near the center of the lake, which averages from five to six feet in depth, with about 100 acres covered by water. Arrangements have been made by D. E. Legan, superintendent for Tidal Oil Company in the district, to connect the waterbound rigs with wooden bridges. Original plans called for the draining of the body of fresh water, but the water is needed for drilling purposes during the dry spells.

Atlantic Oil Producing Company made substantial additions to its acreage reserves within the field proper during the past week by a series of purchases from independents. The company is reported to have acquired a half interest in Golding-Murchison Oil Company's A. D. Blackwell 83-acre lease, with four wells, and the M. L. Thompson 50-acre lease, with three wells and one drilling test. Both of these properties are in the M. J. Prue Survey, Joiner area. Purchase of a half interest in Houston Oil Company's and J. K. Wadley's 31-acre H. L. Foster lease, W. G. Painter Survey; Joe Bander 83.9-acre lease and T. W. Lee 64-acre lease, both in the David Ferguson Survey, is reported to have been made on a basis of $2500 cash per acre.

A decisive depth will probably be reached before the close of the present week on Cranfill-Reynolds Company-Leon Russ et al's M. L. Rash 1, a wildcat test in eastern Upshur County, and about four miles northwest of production in the East Texas field. This test was drilling below 3430 feet early this week after having logged base of Pecan chalk at 2965 feet, or at a sub-sea depth of 2636 feet, with top of the same formation picked at 2422 feet. In the event the Austin chalk body thickens in proportion to the first chalk when compared to the logs of failures in the area, it is doubtful if the Woodbine sand will be found above the water table.

Cut in East Texas Allowable Reduces Output 67,873 Barrels

Tyler, Texas.—A reduction of 67,873 barrels in the actual output of the East Texas field took place during the 24-hour period ending 7 a. m. November 8 as result of the allowance per well having been cut from 150 to 125 barrels daily upon orders of Governor R. S. Sterling in order to hold the field near its 400,000-barrel quota. The field produced 421,336 barrels from 2816 wells reporting production on the last day of the 150-barrel allowance period, and on the following day dropped to 353,463 barrels from 2826 wells that reported production, or an average of 125 barrels daily per well.

Under the 125-barrel per well allowance the field must have 3200 wells on production to return to the 400,000-barrel level, and at the present rate of completions slightly less than four weeks will be needed to attain the maximum figure. However, it is quite probable that a substitute plan of proration will be ordered applied to the field by the governor within a few weeks.

The accompanying table shows the rapid comeback scored by the field after having been cut from 165 to 150 barrels per well, and it was during this period that the weekly quota of completions soared above previous records. During the 13-day period ending November 8 completions in the field increased from 2639 to 2876, or an average of 18 per day. This high average will not be continued owing to the fact that field activity has declined during the past two weeks, and operators are expecting a change in the proration plan that will serve to penalize unnecessary drilling.

Official data on proration of the East Texas field, as compiled each day by the military authorities, is listed below in table form beginning three days prior to the reduction

of the allowable per well from 165 to 150 barrels daily and carried through the new reduction:

Period ending 7 a. m.	Total wells completed	Wells reporting prod.	Wells off prod.	Wells not reporting	Pipe line runs	Total prod.	Daily average per well
October 27	2,639	2,621	9	9	432,767	429,042	163.7
October 28	2,662	2,627	13	22	443,660	433,670	165
October 29	2,682	2,666	13	3	428,631	437,019	163.9
October 30	2,705	2,655	18	32	472,414	400,802	150.9
October 31	2,725	2,681	18	26	425,643	405,218	151.1
November 1	2,746	2,684	14	48	459,737	405,081	150
November 2	2,764	2,737	20	7	379,409	413,309	151
November 3	2,784	2,746	16	22	397,755	413,211	150.5
November 4	2,803	2,773	12	18	394,686	414,956	149.6
November 5	2,820	2,783	13	24	470,230	416,210	149.6
November 6	2,836	2,791	15	30	423,034	418,169	149.8
November 7	2,858	2,816	9	33	433,513	421,336	149.6
November 8	2,876	2,826	13	37	396,234	353,463	125
November 9	2,889	2,881	6	2	361,028	360,533	124.2

Note—Pipe line runs includes receipts plus crude used as fuel and road oil and for washing in wells.

Five New Tests Authorized For Van During Past Week

Tyler, Texas.—Five new tests authorized for the Van field during the past week increased total operations to 10, including the deep test that is making a try for production in the Trinity sand horizon. Four of the active tests have cemented pipe on top of the Woodbine sand, and are slated to be completed before close of the current week. Four of the new locations were made on leases held by Pure Oil Company, and the other on Sun Oil Company's I. W. Thompson 20-acre unitized lease. Pure Oil Company's V. T. Davis 1, which is drilling to the Trinity sand, resumed at 3606 feet early this week after straightening crooked hole at the 3600-foot level, where it was reported five degrees off vertical.

Operations in East Texas Decline 86 During Week

Longview, Texas.—Operations in the East Texas field registered a decline of 86 during the past week as result of completions greatly exceeding new locations for two consecutive weeks, while a portion of the shrinkage in activity is also due to the cancellation of location and derricks in anticipation of an early change in the method of fixing production allowances. The alteration of the proration rules is now in the hands of the governor, who is devising a plan that will provide for production penalties on leases contributing unnecessary drilling. The field reported 779 operations towards the close of last week, as compared to 865 the week previous, and a peak level of 886 operations three weeks ago.

There were 93 new locations reported during the past week, while during the same period there were 129 wells completed as producers. Almost 50 per cent of the new field work is allotted to the Longview area, which accounted for 45 of the new locations, and also contributed 64 to the weekly quota of completions.

The decline in field work last week mostly appeared in the locations and derricks-rigs classification, as active tests, which includes all operations that have progressed beyond the spudding stage, decreased only three. The number of active tests will soon decline rapidly because of the fewer new operations coming forward to keep the rotaries engaged.

Humble Oil & Refining Company was credited with 15 new locations during the past week, and this new work forced the company far ahead of other majors in total activity, having a total of 61 operations late last week. Magnolia Petroleum Company occupies second place, with 35 operations, including four new locations for the past week. Arkansas Fuel Oil Company is credited with 23 operations, while Sinclair Oil & Gas Company now ranks fourth in activity after having led the list three weeks ago. The latter scored 29 completions week before last, and 18 during the past week.

Operations East Texas Field

Most active companies operating in Gregg, Rusk, Upshur and Smith Counties, comprising the East Texas oil field, are listed below, with total operations held by each, exclusive of completions, as of November 6, 1931:

Company—	Locations	Derricks & Rigs	Active Tests	Total Underway
Humble Oil & Ref. Co.	5	35	21	61
Magnolia Petroleum Co.	11	9	15	35
Arkansas Fuel Oil Co.	4	8	11	23
Sinclair Oil & Gas Co.	1	5	16	22
Yount-Lee Oil Company	6	8	7	21
Mid-Kansas Oil & Gas Co.	6	6	7	19
Tidal Oil Company	6	4	9	19
The Texas Company	2	6	10	18
Atlantic Oil Prod. Co. et al.	8	.	8	16
Shell Petroleum Corp.	2	.	12	14
Stanolind Oil & Gas Co.	5	.	9	14
Stanolind-Simms Oil Co.	1	2	5	8
Gulf Prod. Co. et al.	4	4	5	13
Sun Oil Company	1	1	10	12
California Pet. Corp. of Ven.	2	1	7	10
Golding-Murchison Oil Co.	.	4	5	9
H. L. Hunt et al.	.	5	2	7
Prairie Oil & Gas Co.	.	1	6	7
Amerada Pet. Corp. et al.	2	.	3	5
Cranfill-Reynolds Co. et al.	1	2	2	5
Sabinas Oil Corp.	4	.	1	5
Barnsdall Oil Co. et al.	.	4	.	4
C. B. Bunte, Inc.	3	.	1	4
Empire Gas & Fuel Co.	.	.	4	4
Superior Oil Co.	.	2	2	4
Vacuum Oil Company	1	.	3	4
Total for 26 companies	75	107	181	363
Miscellaneous companies	49	134	233	416
Total	124	241	414	779
Total previous week	167	281	417	865
Operations By Areas				
Longview	57	115	174	346
Joiner	26	70	129	225
Kilgore	41	56	111	208
Total	124	241	414	779

Shelby County, Texas, Test Bailed Dry With Gas Show

Marshall, Texas.—McRobie and associates during the last week bailed dry with a small show of gas in Windham 1, William Leach Survey, Shelby County, Texas, where the second stratum of sand showing oil in the Blossom series was cored earlier in the week from 2686 to 2692 feet. Total depth is 2704 feet in sandy shale.

In the same county J. E. Stock and associates abandoned Pickering Lumber Company 1, Jonas Harrison Survey, as a dry hole at 780 feet.

North and West Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Northwestern Ward County Test In West Texas, Is Successful

San Angelo, Texas.—The first wildcat strike in West Texas in many months made its appearance during the past week when John F. Shipley, D. Harold Byrd and H. A. Harmon's deep lime test on the Lee Monroe ranch in northwestern Ward County developed 800 feet of oil in hole from the Delaware lime horizon at total depth of 4665 feet. This discovery well is located about 12 miles southeast of the Wheat pool, Loving County, and the latter is the only area in West Texas that yields oil in commercial quantities from the Delaware formation, although it is an attractive horizon in Northwestern New Mexico and some Rocky Mountain states. Operations on Monroe 1 were first started in July, 1929, and two holes were junked above the 600-foot level. It is expected to make a small producer if shot at the present depth, but in all probabilities will be deepened through the oil horizon before a shot is given the hard sandy-lime.

Monroe 1 is located in the west corner of Section 3, Block 1, W. & N. W. Ry. Survey, and was carried to the 4550-foot level by Shipley et al last September. Byrd and Harmon received 40 per cent interest in the test and 640-acre drilling site for deepening the hole to the Delaware, and also have about 4500 acres of checkerboard lease protection in close vicinity. The hole is cased to the 3800-foot level, with 6⅝-inch pipe, which was cemented with 30 sacks, and a shoulder was made at 4550 feet for the landing of a string of 5 3/16-inch pipe. The Delaware, or black lime was topped at 4630 feet, and first sand at 4664-65 feet, with a surface elevation of 2655 feet. The oil is reported to test 32° gravity, and is of a much higher temperature than that found in the Wheat pool.

Penn Oil Company and Southwest Oil Production Company's J. B. Tubb 1, located several miles northwest of the Tubb ranch discovery well in western Crane County, encountered another show of oil early this week in hard lime at 3835-40 feet. This outpost test has checked higher on all key formations than the discovery well, and is due to encounter sulphur water within the next 50 feet. Production is expected in the lower lime section blow 4200 feet.

Third Producer Is Completed in Chalk Hill Pool, Archer County

Wichita Falls, Texas.—Completion of a third flowing well from the Canyon lime horizon in the Chalk Hill pool, Archer County, early last week was made by Deep Oil Development Company and Lindsay Drilling Company's L. F. Wilson 1, lease 1, with an initial rating of 800 barrels of 42.8 gravity oil natural daily flow from a sandy-lime at 2196-2212 feet. This well is a south offset to Deep Oil Development Company's Wilson 1, lse. 5-A, which is drilling below 5800 feet after passing up a big well in the 2200-foot horizon last June to fulfill a deep test contract; is also a southwest offset to the discovery well of the Canyon lime horizon. The new producer in the Canyon lime is located in the northwest corner of the east 80-acres of the NW Section 119, A.T.N.C.L. Survey, and logged the Gunsight lime marker at 1368-71 feet, with a surface elevation of 965½ feet.

Consolidated Oil Company-Deep Oil Development Company and Atlantic Oil Producing Company's L. F. Wilson 1, Section 76, is scheduled to reach the Canyon horizon this week, and if a successful completion will extend the field about 1500 feet northeast of the discovery well.

In southern Wichita County, Primrose Refining Company and Consolidated Oil Company's Munger 1, a Strawn sand test, is reaming crooked hole to lower 6⅝-inch pipe to be cemented above a showing of oil encountered in saturated lime at 3875-96 feet.

Bridwell Oil Company's Oil Investment Company 20, located in Section 125, Club Ranch sub-division, and in central Archer County, extended shallow production about 3500 feet to the north last week with a 75-barrel well in sand at 1440-56 feet. Gulf Production Company sub-leased this tract for a 1/16 over-riding royalty. The above test was scheduled to try for production in the Canyon lime in the event it missed the regular sands, although Number 19 on the same lease failed to produce when drilled to 2329 feet last August.

Shell Puts East Texas Field Men on Five and Six-Day Basis

Dallas, Texas.—Between 30 and 40 field men now on the payroll of Shell Petroleum Corporation in the East Texas field will escape being cut off with the sharp decline in drilling activity now being experienced by the company through the adoption of a five and six-day week plan. Effective November 1 this company placed unmarried roustabouts and laborers on a five-day week, while on the same date lease foremen, warehousemen, married roustabouts and laborers were limited to six days per week. Under this plan the off-days for the workmen are rotated in order to maintain more men on the payroll, otherwise the slackened volume of work would force the company to discharge a portion of its present field staff with full knowledge that new jobs would be difficult, if not impossible, to obtain. Special consideration is shown men with families in restricting the number of working days per week.

Humble Oil & Refining Company has been assigning off days each week by rotation to certain classes of field labor for weeks in order to carry more men on its payroll, and especially to help absorb some of the former employes thrown out of work in other fields. H. L. Hunt, Tyler independent operator, was mentioned several weeks ago as having placed all field men on a six-hour day basis in order to double the payroll roster, and also added a 10 per cent increase in hourly wages to partially offset the loss in revenue to be borne by the workmen. J. Edgar Pew, vice president, Sun Oil Company, has endorsed the latter plan of helping out on the oil field labor situation, and recently directed a letter to all leading operators enlisting their support to such a movement.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Well In Saxet Field May Open New Deep Horizon

San Antonio, Texas.—Neal-Milton and Kepley Production Company' Roark 1 is testing a sand cored at 4844 feet. The well is in the Saxet field of Nueces County and gives promise of opening a new deep horizon. This well originally showed for a good producer at 4825-32 feet, but made salt water when drilled in. It was whipstocked back and reamed out, drilling down to the present level, which likely is the same sand, the difference in the depths being accounted for by the crooked hole.

L. L. Smith's deep prospect on the Alexander tract in the Saxet field was abandoned at 5357 feet, while Saxet Oil Company is starting its Weil 5.

Gulf Coast Oil Company has two deep operations. The Sagarin 1 cored a sand at 4638 feet which showed an oily, salty mud and 500 pounds pressure on a drill stem test. The same company's Elder 1 made salt water in a sand at 4892-97 feet after drilling in. It showed some oil and gas when cored, but no successful drill stem test could be made. The casing was then set and the well drilled in.

Important Developments Feature Activity in Duval County Field

San Antonio, Texas.—An important wildcat showing, extension of the pool and more activity in the Schoolfield & O'Byrne pool, featured Duval County activity during the week.

Thomas and Tarver's Welder-Wood 1 showed several thousand feet of gas and 40 feet of mud with no water in a sand at 2152-55 feet and has set casing preparatory to testing. The well is 1050 feet west of the southeast corner of Section 269, thence 501 feet south at right angles from that line. It is 2½ miles west of the shallow Buchanan pool and 16 miles from the Schoolfield & O'Byrne pool. Its most important connection, however, is with the Putnam et al wildcat, one mile south, which showed gas and salt water at a slightly lower level.

The Texas Company's Bishop Cattle Company 3, Section 135, is a producer rated at 500 barrels daily at a total depth reported to be 2354 feet. The top of the sand is 2312 feet and 6⅝-inch casing is set at 2310 feet. On the same section, Thomas and Tarver have spudded in their Bishop Cattle Company 4. Also on that survey, Duval Oil Corporation topped the pay at 2335 feet in Bishop Cattle Company 6 and set casing at that level. The sand will be drilled at the time the plugs are drilled out. Humble Oil & Refining Company is drilling in its White 2 on Survey 58. The sand was recorded at 2291-97 feet with casing set at 2288 feet. More sand will be taken at the time the plugs are drilled. In the extreme western portion of the field, Magnolia Petroleum Company's J. O. Wilson 6, Survey 136, topped the sand at 2230 feet and set 6⅝-inch casing at the same level. It is likely that this well will make a gasser, inasmuch as it is on that side of the structure and hit the formation unusually high.

S. R. & C. Oil Corporation and Vacuum Oil Company's Duval County Ranch Company 5, is capable of making 250 barrels daily on pump after deepening to 1737 feet, and is showing 12 per cent. The well is 440 feet northwest of No. 3 and indicates the trend of the field in that direction. Three producers have been completed and two dry holes drilled in the pool, which is controlled by these operators. The new producer topped the sand at 1723 feet and set 6⅝-inch casing at 1720 feet. Duval County Ranch Company 6 has set surface casing at 45 feet. Both wells are in survey 293. The last well to be drilled is 100 feet west and 400 feet north of No. 5.

New Wells and Operations Are Reported for Jennings Field

San Antonio, Texas.—A number of new producers and new operations were reported in the various extensions of the Jennings field of Zapata County during the past week.

O. W. Killam's Cuellar 31-A, Cerrito Blanco Grant, is making 75 barrels from 1522-39 feet. The 6⅝-inch casing set at 1522 feet did not hold and a string of 5 3/16-inch casing was run to 1524 feet. Killam's Cuellar 45-B, Survey 277, is making 100 barrels from 1522-59 feet with 6⅝-inch casing set at 1551 feet. Cuellar 46-B, Survey 277, has spudded. All of these wells are in the Cuellar extension pool.

In the Muckelroy pool, O. W. Killam has made a location for A. Bustamante 10 on Block 11, Share 5. E. K. Bateman has spudded in M. Garza Estate 1, Block 29, subdivision of Zorro ranch. Joe M. Gier is rigging up on his M. Garza Estate 1, Block 18, C. A. Douglas subdivision, Grayburg Oil Company has spudded in its F. G. Martinez 1, on Survey 4. S. R. & C. Oil Corporation has the derrick up and is preparing to rig up on its Trevino 5-E.

A one-mile southeast extension was provided to the Martinez pool by Newton, Owen and Evans' Rafael Garza 1, which made a gasser showing 15,000,000 cubic feet daily with 610 pounds pressure at 1753-56 feet. The 6⅝-inch casing is set at 1750 feet. The well is on Block 4, Share 1, Survey 161.

In the main Jennings pool, South Texas Production Company has set 37 feet of 12½-inch casing in its Measles et al 10, Survey 207, and is preparing to drill ahead.

South Extension of Salt Flat Field Is Considered Possible

San Antonio, Texas.—An extension of two locations to the south in the Salt Flat field of Caldwell County is possible in Joe Bruner's Malone 1, which is showing for a small well in the Austin chalk at 2572 feet. The well was estimated at 25 barrels maximum production when first brought in November 2, but looks slightly better since being shot. It has been cleaned out and is now being bailed and swabbed. A production test will be made, and if not sufficient production is obtained, it will be deepened to the Edwards lime, also a producing level in the field; casing is set at 2395 feet. The well is 150 feet from the north line and 350 feet from the west line of the south 30 acres in the A. Floyd Survey.

Operators Watch Developments At Damac for Possible Trend

San Antonio, Texas.—The trend of the Damac pool, one mile southwest of the Pettus townsite pool, Bee County, is still a speculation and lease holders are watching each test with tremendous interest. There is suggestion that the pool's discovery well is in one producing area and the producer 2800 feet west of it is in another pool. In any event, the district is to get a real campaign. In addition to the two producing wells, there are two active tests, one dry hole and six locations.

The most interesting well in the pool at this time is H. H. Weinert and C. R. & M. Drilling Company's George A. Ray 1, on a 14-acre block between the field's two producers. It is in upper Jackson series and drilling at 3086 feet, due to hit the pay by the week-end. The other well is Houston Oil Company's Portis 2, A. Smalley Survey, southeast offset to Damac Oil Corporation's Ray 1, discovery well. It is being spudded in.

The new location announcements of the week included two between the two producers. J. M. Davis et al, drillers of the discovery well, have taken over 10 acres of the George A. Ray ranch just east of Buchanan and Lefevre's George A. Ray 1, extension well, and will drill an offset. Just south of Weinert's lease, Morgan and associates have taken over 10 acres of the Ray lease. It also adjoins the Damac lease. All of the above wells, including the producer, are in the John Williamson Survey. West of the 100-acre lease on which the extension well is located and in the Williamson Survey, C. R. & M. Drilling Company will drill its Ray 1, the most westerly well in the pool. A north offset to the Buchanan and Lefevre well will be provided by The Texas Company on the L. Brammel tract, John Pace Survey, and a northeast offset will be drilled on the Ray tract in the George A. Kerr Survey by the Slick Estate, it is reported. It is likely that several of these wells will start within a couple of days.

Buchanan & Lefevre's Ray 1 is now flowing at the rate of 500 barrels daily through three-quarters choke after plugging back from 3908 feet to 3897 feet. The well has the top of the sand at 3887 feet. It found salt water in the lower portion of the formation, but plugging back cut off the water entirely. The fact that this well hit the formation considerably higher than the discovery and showed water, while the original test flowed pure pipe line oil, throws a new light on the field. The completion of a 660-foot northeast offset to the discovery as a dry hole furthers the contention that the two wells may be in separate pools. Salt water was found three-fourths of a mile east and the same distance southeast of the Damac producer.

In the main pettus pool, United Production Company Ray 39 in the T. Hason Survey, is drilling at 6989 feet.

Refugio Field Now Has Three Active Operations

San Antonio, Texas.—Refugio field has three active operations. Larcro Gas and Petroleum Company has spudded in Strauch 4 on lot 6, block 2 of the townsite, and is setting about 300 feet of surface casing. Moody-Seagraves Producing Company is drilling its St. John 2-A at 3642 feet, while United Production Company is making hole at 5632 feet in its W. J. Fox 2-A, in the Williams Hewes and L. Brown Survey.

In the wildcat area, Humble Oil & Refining Company is preparing to resume drilling after setting 9⅝-inch casing at 3879 feet in its M. V. O'Conner 1, in the John Keathing Survey, near the Victoria County line.

Second Camp Pool Test Shows Increase When Worked Over

San Antonio, Texas.—John F. Camp's Denman 1, 2500 feet south of the same operator's Sue Denman 1, discovery well of the Camp pool, Guadalupe County, has been completed for about 2500 barrels through tubing. This well showed 1380 barrels on a potential gauge slightly more than a week ago, but has improved after being worked over. It hit a crevice in the Austin chalk at 2400 feet.

North of the same well, Humble Oil & Refining Company has set 60 feet of surface casing in its Dan Denman 2-C and is drilling ahead. This well is apparently attempting to find the crevice that gave Denman 1-C an initial flow of better than 5000 barrels. All wells are in the William Arrington survey south of Darst Creek.

Webb County Test Preparing To Complete at 3026-59 Feet

San Antonio, Texas.—Usher Carson's Webster 5 is preparing to complete in a sand cored at 3026-50 feet, which showed for an oil producer. Four and one-half-inch casing is set at 3026 feet. The well is in the northwest one-fourth of the southeast one-fourth of Survey 684, Carolina-Texas pool, Webb County.

In the Cole pool of the same county, O. W. Killam is drilling Bruni 22, Survey 90, at 2380 feet in rock.

San Antonio, Texas.—A test to 7000 feet is planned on the Buckley-Walling ranch of La Salle County. It is Buckley Ranch Oil and Gas Company's Buckley et al 1, Section 37, which is being drilled by Joe Bruner. The well cored a formation at 4501-04, which apparently is the Navarro. The well is temporarily shut down for heavier equipment.

San Antonio, Texas.—Purchasers of oil in Somerset, Southton and Dobrowolski fields of Bexar County, have met price increases in crude oil. Oil is purchased on gravity basis with the new schedule being 61 cents on 29 gravity or below with a two-cent differential upward on each degree of gravity up to 40 and above, the top price being 85 cents.

Meridian, Miss.—The gravity of the oil obtained at the top of the Eutaw formation in eight feet of sand from 3692 to 3700 feet in Gulf Refining Company's Long Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, East Central Mississippi, is 16.5 gravity, a test has revealed. It is said to be however, a good fuel oil. No complete analysis of the crude has been announced. On Monday, November 9, operators were making good progress in deepening the well to the Tuscaloosa, which is expected to be picked up about 4450 feet. Monday the well was drilling at 3889 feet in gray sandy shale; elevation is 380.3 feet.

Jackson, Miss.—Gas from the Jackson field was turned into Public Service Corporation's 90-mile electrically welded 8⅝-inch gas line from Jackson to Hattiesburg, Mississippi, last week. Late in the week the gas was reported to be ready at Hattiesburg for turning into the distribution system. Southern Petroleum Company is furnishing the gas from two of its wells in the Rankin County side of the field.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Another Semi-Wildcat Producer at Clear Lake

Houston.—The newly developed field of Clear Lake, sometimes referred to as Thompson dome, Fort Bend County, was the scene of considerable activity this week with the completion of a well by Cullen and West and Gulf Production Company and the entry of Gulf Production Company as an individual operator.

Cullen and West and Gulf Production Company's Lockwood Sharp-2-A was brought in at 5151 feet flowing 136 barrels per hour of 25 gravity oil, with a pressure of 400 pounds on the 2½-inch tubing; 136 feet of 4¾-inch screen was set on bottom.

George 2, drilled by the same operators, is flowing 42 barrels per hour through two one-inch chokes after having been brought in originally barefooted for 1200 barrels of 24.8 gravity oil. Their Lockwood-Sharp 4-A is nearing the 4000-foot mark.

Gulf Production Company has announced a location for Myers 1 at Clear Lake 800 feet north of Cullen and West and Gulf Production Company's Lockwood-Sharp 2-A, the above referred to completion.

Harris County Wildcat Abandoned in Big Lime

Houston.—Highlands Petroleum Corporation, engaged for the past several months in wildcat activity in the region five miles west of Barbers Hill, this week abandoned Haney 1, located 150 feet each way out of the northeast corner of the Haney 730-acre tract, T. Pitching Survey, Harris County.

Haney 1, formerly a project fostered by J. P. Hunnicutt et al, was abandoned in the Big Lime at 5872 feet. The contact of the Oligocene and Miocene formations in this well was believed to have been made at about 5440 feet.

Two Feet of Sand Cored In Houston County Test

Houston.—Ramsland et al, drilling the wildcat Pennington 1 four miles west of Grapeland, Houston County, are preparing to test two feet of sand cored at 1698 feet, according to reports received in Houston late this week. Pennington 1 is located 228 feet from the north and 591 feet from the west line of the R. Harza Survey.

Evangeline District Deep Test Has Cementing Trouble

Houston.—Yount Lee Oil Company, making a deep test in the Evangeline district of Acadia Parish, Southern Louisiana, has been unable at this writing to obtain a satisfactory job on cementing seven-inch casing at 7745 feet in its Housierre Latrielle 10.

Housierre Latrielle 10 was spudded early in July to test out a part of Section 47-9s-2w, and originally was drilled down to nearly 7800 feet, slightly above which depth it picked up an oil sand. When reaming to set casing, the old hole was sidetracked at about 7470 feet.

Five Calcasieu Parish Tests Are Standing or Shut Down

Houston.—Five exploratory tests in Calcasieu Parish, Louisiana, were all reported as standing or shut down this week. These wells, which have been carried on weekly wildcat reports of THE OIL WEEKLY, will not appear thereon again until drilling is resumed on them. The wells and the status of each follows:

Wilfred Lahay's Jardell 1, a wildcat test located two miles northeast of Vinton in Section 25-10s-12w, has been shut down in gumbo at about 3760 feet for nearly six weeks. Success Oil Company's John Hewitt 1, a wildcat test located two miles northeast of Edgerly field in Section 11-9s-11w, has been rigged up and standing since late August. J. O. Davis' Indian Lumber Company 1, another wildcat, located eight miles north of Starks dome in Section 20-9s-12w, has been shut down in sticky shale for several months at 6568 feet. Crawford Doyle, Trustee's J. W. Johnson 1, on the northwest flank of Starks dome, Section 23-9s-13w, has been shut down at about 370 feet for several months. Union Sulphur Company's Fee 767 in the Sulphur district of Calcasieu Parish, Section 29-9s-10w, has been listed as temporarily abandoned at 3740 feet.

East Hackberry Field Now Yields 10,850 Barrels Daily

Houston.—East Hackberry field, Coastal Louisiana, has witnessed a revival of activity during the past two months that has resulted in an increased production for the old, settled area to a point where the field is now yielding 10,850 barrels per day, according to latest estimates of the American Petroleum Institute.

Several completions of new wells in the old area were responsible for the increase, and a glance over activities listed in the field as of late last week indicate efforts are being made to maintain a daily average output more closely approximating the field's share of the state's allowable.

Calcasieu Oil Company's Watkins 28, for instance, has set 4½-inch casing at 3175 feet in order to obtain production. The well is bottomed slightly above 3200 feet, or approximately in the same sand from which Calcasieu Oil Company obtained production two weeks ago in Watkins 27.

Jim Oil Company, which two weeks ago completed Erwin 2 for 3000 barrels of flush oil at 2969 feet, is building a derrick in 13-12s-10w of East Hackberry for Erwin 3. Yount Lee Oil Company at latest reports was drilling close to 2000 feet on its State Kelso Bayou 46 in East Hackberry. This latter well has set 10-inch casing at about 370 feet.

Barring mechanical delays, at least two of the above projects might be completed before the close of November.

Houston.—The Texas Company abandoned State Lake Pelto 6 in the Lake Pelto district of Terrebonne Parish, Louisiana, this week in salt at 2660 feet. State Lake Pelto 6, located in Section 28-21s-14e, entered the salt at about 2450 feet and was in same continuously until it reached a depth of 2665 feet.

Louisiana--Arkansas Field Notes

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Zwolle Without Location Or Completion During Past Week

Shreveport.—Zwolle, the most active oil field in North Louisiana, went without a completion or a new location during the last week. Lack of water for drilling purposes is badly handicapping operations in the Zwolle east field.

Five miles northwest of Zwolle, J. J. Kean's Belton 1, NW SE NE Section 31-9-13, which topped the Zwolle chalk unusually high at depth of 1590 feet, with elevation of 233 feet, was standing last week with 300 feet of oil in the hole, but later it was bailed dry; total depth is 2039 feet, still in chalk.

Loring Oil Company's Bowman-Hicks 18, SW NW Section 15-7-12, which is a test below the Zwolle marl and pay horizon at 2200-2700 feet, and may go to 6000 feet, tested dry through drill stem at 4017 feet last week, and later was reported drilling lime and shale at 4079 feet.

North Louisiana had only two completions during the last week, both gassers in the Richland Parish gas field. Southern Carbon Company's Rosengrant and Ducomb 7, Section 24-17-5e, gauged 12,343,000 cubic feet of gas with rock pressure of 870 pounds at 2440 feet in shale; and, United Public Service Company's Faust 1, Section 13-17-5e, gauged 18,040,000 cubic feet with rock pressure of 850 pounds at depth of 2425 feet in shale.

Only one new location was made in North Louisiana last week; this was R. A. Keator's Stephens 1, Section 25-10-8w, a wildcat in Natchitoches Parish. Derrick is already up.

Smackover Deep Test is Now In Rock Salt at 6104 Feet

Shreveport.—Lion Oil Refining Company and associates' Guy P. Hayes A-9, NE NE Section 4-16-15, Union County, Arkansas, in the Smackover field, was still in solid rock salt at total depth of 6104 feet late last week. This formation has shown up solidly from 6071 feet. Rock salt was topped at 5974 feet, but above 6071 feet there were streaks of broken lime and salt as well as lime alone.

Three miles west of the Urbana oil field in Union County Joe Modisette and associates last week tested 1,000,000 feet of gas in a drill stem test from 2503 to 2532 feet and will core ahead, in Webb 1, NW SE Section 6-18-13.

One new location was announced in Arkansas; Zepp Oil and Gas Company, which has temporarily abandoned W. E. Hillman 2, SE NE Section 20-10-13, Dallas County, at total depth of 2688 feet in black shale, after the well tested dry at 2655 feet, made location for another test in the same section, Hillman 3, NW NE Section 20-10-13.

Announce Three Locations For Jackson Gas District

Jackson, Miss.—Three new locations were made during the week in the Jackson gas field, one in Hinds County, and two in Rankin County. Atkins and associates have derrick up for Crane-Lawrence 1, NE SE Section 23-6-1e, Hinds County, while Muse and Muse have already rigged up and spudded Wright 1, NE SW Section 12-5-1e, Rankin County. Anderson and associates have derrick up for Ross 1, Section 12-5-1e.

There were no completions in Jackson last week. Late in the week Square Dealing Oil and Gas Company was setting 4½-inch casing in Spann 1, Section 13-5-1e, Rankin County, at 2495 feet, after topping the Midway pay chalk at 2494 feet.

United Public Service Company's McLaurin A-1, NE SW Section 8-5-2e, more than a mile northeast of gas production, reached base of the Midway chalk and topped red beds at 2937 feet, late last week, being in hard sandy lime at 3000 feet; elevation is 284 feet. Wilcox was topped at 1219 feet, and the top of the Midway chalk was 2513 feet.

United Gas Public Service Company has completed a trade for 60,000 acres of wildcat acreage in the Mississippi Delta centering in Sharkey County, including some of the acreage which The Texas Company torsion balanced several years ago and later turned back. It is reported Ohio Oil Company has blocked 25,000 acres in Jackson County, on the Gulf coast, near the town of Ocean Springs.

Clarke County, Mississippi, Well to Test Lower Horizons

Meridian, Miss.—Having failed to make a commercial well in the Tombigbee series of the upper Eutaw formation (which corresponds to the Blossom of North Louisiana), Gulf Refining Company is coring ahead in Long Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, East Central Mississippi, which showed considerable heavy oil in eight feet of sand in the Eutaw from 3692 to 3700 feet. Late last week this test cored gray sandy shale from 3781 to 3818 feet.

The test will be cored ahead carefully, although there is little likelihood of encountering a pay horizon before the Tuscaloosa, which corresponds to the Woodbine, is picked up between 4400 and 4500 feet. In the same company's Box 1, NW SE Section 11-2n-15e, Clarke County, which was abandoned in a soft salt water sand of grayish color at total depth of 4515 feet and which was topped at 4489 feet, with elevation of 221 feet, the Tuscaloosa red beds were topped at 4202 feet. In Box 1 the Midway was topped at 2205 feet, the chalk at 2638 feet and its base and the top of the Eutaw was 3703 feet. In Long Bell Lumber Company A-1, with elevation of 380.3 feet, the Midway black shale was topped at 2290 feet, the chalk at 2633 feet, and top of the Eutaw was 3673 feet.

As reported previously the latter test when first bailed at 3700 feet showed heavy oil and salt water; and sand rose in the hole. Later this was cleaned out to bottom and a seven-foot core was taken which was sandy shale. At total depth of 3707 feet the well was bailed dry and within an hour 30 feet of oil, 50 feet of salt water, and 50 feet of sand rose in the hole. The hole was again cleaned out and coring resumed.

These two wells were drilled by Gulf Refining Company after 23 diamond core drill tests were made on this block, which is several miles northwest of the Hatchatigbee Anticline, which extends northwest-southeast in Western Alabama and East Central Mississippi.

More than 200 oil men, including representatives of a number of major companies, scouted the test before and during the bailings given it in the upper Eutaw. More interest has been shown in this development than at the discovery gas wells in either Jackson or Amory, Mississippi's two gas fields.

INTERNATIONAL PETROLEUM
IN REVIEW

ROY E. LEIGH, *Foreign Editor, New York*

Royal Dutch and Anglo-Persian Merge

New York.—News comes from England of an agreement for close co-operation between the Royal Dutch-Shell group and Anglo-Persian Oil Company, Ltd., in the British markets. It is stated that details of this close association, which will be effective only in the marketing branches of the two groups, have not yet been worked out; and that it has not yet been decided whether their marketing subsidiaries will be merged or whether their co-operative association will take the form of a consolidation of personnel and physical facilities for distribution. It is said that decision also remains to be made regarding the trade names or brands under which their combined products will be marketed.

Other British interests operating in the British market include Medway Oil and Storage Company, Ltd., Trinidad Leaseholds, Ltd., and National Benzole Company, Ltd., American interests include subsidiaries of Standard Oil Company of New Jersey, Standard Oil Company (Indiana), The Texas Company, and Henry L. Doherty and Company. The Russian share of the market is in the hands of Russian Oil Products, Ltd., controlled by the Soviet Naphtha Syndicate.

This merger or co-operative association, as it may be called, is but an extension of existing arrangements, as the marketing activities of Anglo-Persian and Royal Dutch-Shell groups have long been merged with those of Burmah Oil Company, Ltd., through the agency of Burmah-Shell Oil Storage and Distributing Company, Ltd., operating in the markets of India and the Orient.

Shell Organizes German Drilling Company

New York. — Dispatches from Germany bring news of the organization of the Teutonia Tiefbohr-Gesellschaft (Teutonia Deep Drilling Company), at Cologne, the capital stock of which is held 90 per cent by Bataafsche Petroleum Maatschappij and 10 per cent by Alfred Wirth, of Erkelenz, and the Otto Wolff interests, of Cologne, manufacturers of drilling equipment and oil well supplies.

Bataafsche Petroleum Maatschappij is recognized as a subsidiary of Royal Dutch-Shell group, and the assumption is that the new drilling company will be entrusted with the drilling operations of Ostoel, G. m. b. H., recently organized to take over acreage assigned to Shell interests by North European Oil Corporation, of New York and Hannover.

Amtorg Denies Moratorium Rumor

New York City. — Peter A. Bogdanov, chairman of the board of directors of Amtorg Trading Corporation of New York, made formal denial in a statement issued last week of rumors which have appeared in the European press to the general effect that Soviet commercial agencies have been instructed to negotiate for the extension of payments accruing to American manufacturers for machinery and other equipment shipped to the Soviet Union.

"The security for credits granted to Soviet purchasing organizations is guaranteed first of all by the stability of the Soviet government itself," he said. "It is worthy of note that during the present depression, when many countries experienced losses through bankruptcies of their customers in foreign countries, Soviet obligations have been met in every single case. Nor has the Soviet Union asked for any extensions or moratoriums on any payments coming due."

Mr. Bogdanov referred elsewhere in his statement to a "sharp downward trend in Soviet purchases in this country" and stated that this development was "not anticipated by Soviet foreign trade organizations and was brought about by the unfavorable conditions prevailing in this country with regard to trade with the U. S. S. R."

"The further developemnt of Soviet-American trade," he said, "will depend primarily upon the solution of two main problems, namely, that of affording the Soviet Union full opportunity to develop its exports to this country and that of providing adequate financial facilities for Soviet purchases. The developments under the Five-Year Plan and under the plans which will succeed it will make the Soviet Union for an indefinite period of years to come a large and increasingly important market for the commodities which this country produces."

Mexican Production Totals 66,293 Barrels

Tampico.—Production from the Panuco and Tuxpan districts totaled 66,293 barrels per day during the week ended October 24, this average including 37,963 barrels of heavy oil and 28,330 barrels of light oil.

Oil and the Panama Canal

New York.—Mineral oils represented more than 26 per cent of east-bound traffic through the Panama Canal during the fiscal year ended June 30, 1931, according to figures made public by the United States Department of Commerce. This despite a decline of 15.4 per cent by volume as compared to figures for 1929.

Oils head the list of commodities moving in the east-bound stream, from the Pacific Coast of California, Peru, and Ecuador to the Atlantic coasts of the United States and Europe, and stand second on the list of cargoes moving from the Atlantic to the Pacific.

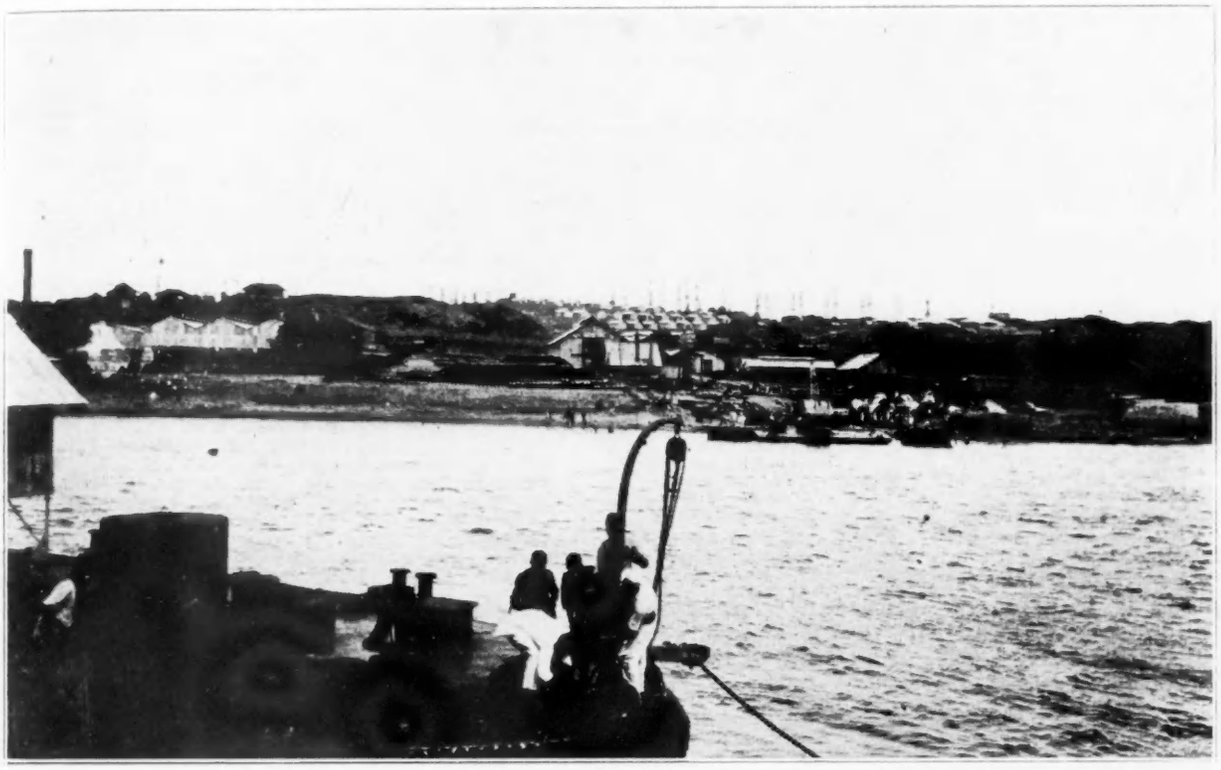
Figures for the last four years are quoted below, in units of long tons:

	1928	1929	1930	1931
Atlantic-bound	5,619,076	5,197,813	5,700,587	4,824,338
Pacific-bound	717,080	806,744	682,742	485,520

Venezuelan Production Off in September

Maracaibo, Venezuela—Venezuelan oil production totaled approximately 9,412,000 barrels during the month of September, a decline of 384,000 barrels as compared to figures for the month of August. Export shipments, however, increased to 9,420,000 barrels, as compared to a total of 9,274,000 barrels during the previous month.

▼ INTERNATIONAL PETROLEUM IN REVIEW ▼



--Photo by John R. Dallerup, Reed Roller Bit Co.

Chauk Field from Irrawaddy River, Upper Burma.

Oil Legislation In Chile

Santiago, Chile.—The Chilean house of representatives has passed the new oil refining bill, which was submitted to the senate on October 30.

The bill is intended to grant a monopoly on the refining and sale of oil, gasoline, and other petroleum products for a period of 17 years; and is so drawn that the government will receive 75 per cent of the profit of the oil concessionnaire during the term of the monopoly. At the expiration of the 17-year period, all rights, privileges, and facilities of the concessionnaire will revert to the government.

The Chilean market is at present supplied largely by West India Oil Company, South American marketing subsidiary of Standard Oil Company of New Jersey, and Shell-Mex, Ltd., subsidiary of Royal Dutch-Shell group.

If the bill becomes law, one or the other of these organizations will be forced to withdraw; or, if a third party is successful in bidding for the proposed governmental concession, both may be forced to retire from the Chilean market.

Chilean requirements are now supplied from Peru and California.

Sinclair Reduces Gasoline Price in Switzerland

New York City—The Neue Zuricher Zeitung reports that the "Association of Non-trust Importers," of Switzerland, supported by Sinclair Union Petroleum Company, has taken the offensive in competition with subsidiaries of Standard Oil, Royal Dutch-Shell, and Anglo-Persian by reducing the filling-station price of gasoline from 35 to 33 centimes per liter.

World Oil News in Brief

Trinidad

Production of crude oil in Trinidad, British West Indies, totaled 7,407,244 barrels during the first nine months of the current year, as compared to a total of 7,175,602 barrels during the same months of 1930.

British India

Statistics from Calcutta indicate that British India produced 2,023,222 barrels of petroleum during the second quarter of 1931, this representing a decline of 22,562 barrels from the total for the same quarter of 1930. Declines occurred chiefly in the output of the fields in the Punjab and Burma, there having been an increase in the output of the Assam Oil Company, Ltd., operating at Digboi, in Assam.

Ecuador

Ecuadorian oil production averaged 5321 barrels per day during the month of September, according to latest figures available in this country.

Poland

Polish oil production fell from a total of 379,736 barrels during the month of July to a total of 374,997 barrels during the month of August, 1931.

Total output so far this year has fallen about eight per cent below that of the same period last year.

Curacao

A total of 1,249,731 barrels of gasoline was exported from the Island of Curacao, Dutch West Indies, during September, 1931.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER AREA—		
Adams & Lyle, L. P. Thrash (26-ac) 1	6000	3727
Big Indian Oil Synd., W. R. Wolford (40-ac) 2	7500	3728
British-American Oil Prod. Co., Kangerga 4	10,000	3638
Brookshire et al, S. S. Cook 1	8000	3758
Bussa Co., W. P. Brett (10-ac) 2	4000	3740
Corzelius et al, (was E. O. Gilbert) N. Turner 1	9000	3789
A. J. Erlewine (K. O. T. Oil Co.), S. S. Cook (46-ac) 2	9000	3714
Golding-Murchison Oil Co., W. D. Kinney (336-ac) 2	2500	3682
W. D. Kinney (336-ac) 3	2300	3662
Gulf Prod. Co., O. H. Grissom (100-ac) 5	8400	3779
P. L. Hoffman et al, W. R. Rollins (11-ac) 1	9000	3670
Hooper et al, Deason 1	3000	3680
Humble O&R Co., M. D. Caldwell (73.1-ac) 3	8300	3781
Lesh Hill 1	8500	3726
C. J. Thompson (116-ac) 3	9000	3694
H. L. Hunt et al, Della Wooley (53-ac) 1	5500	3778
M. & G. Oil Co., Minor 1	5000	3816
A. G. Oliphant et al, W. O. Alford 1	5200	3782
J. E. Prime et al, J. H. Stewart (4-ac) 1	6000	3764
R. M. V. Oil Co., J. A. Birdwell (149-ac) 5	8000	3622
Sinclair O&G Co., A. S. Jarvis (267-ac) 6-A	9500	3688
A. S. Jarvis (267-ac) 7-A	7500	3698
A. S. Jarvis (256-ac) 2-C	6500	3686
W. D. Kinney (117-ac) 11	8000	3678
W. D. Kinney (121-ac) 19	6500	3654
F. B. Wilson (124-ac) 4	9000	3665
F. B. Wilson (124-ac) 5	9000	3662
Bobbie Wright (10-ac) 1	10,000	3695
Dora Wright (162-ac) 6	9500	3702
Dora Wright (162-ac) 7	10,000	3728
Dora Wright (162-ac) 8	10,000	3743
R. G. Wright (107-ac) 4	10,000	3685
R. G. Wright (107-ac) 6	10,000	3707
W. S. Wright (10-ac) 1	10,000	3704
The Texas Co., First State Bank (160-ac) 3	10,000	3751
L. J. Pinkston (80-ac) 3	2500	3650
J. W. Wilson (134-ac) 5	9700	3680
Tulsa Oil Co., J. E. Wheelis (40-ac) 1	9000	3807
Graddy H. Vaughn et al, W. O. Alford (90-ac) 2	6500	3825
KILGORE AREA—		
Angle & Daniels, J. C. Clayborn 1	9000	3717
Choctaw Oil Co. (was Wyly & Allen), H. T. Elder (8-ac) 1	8500	3580
H. W. Elliott et al, Rogey Lacey 1	7500	3567
C. K. Dawson et al, P. Griffin (4½-ac) 1	7000	3586
Tips DeArmand et al, M. B. King 35.16-ac) 2	8000	3683
Empire Gas & Fuel Co., H. P. Leverett (87-ac) 3	7000	3748
West Florida Oil Co., A. Givens 1	5000	3639
Gulf Prod. Co., C. E. Christian (277-65-ac) 10-C	7500	3675
C. E. Christian (277.65-ac) 11-C	9000	3734
S. Hilburn 3	11,000	3541
S. Hilburn 5	7500	3618
Jones-O'Brien, Inc., John Lloyd (25-ac) 1	9000	3597
Magnolia Pet. Co., Sam Carr (100-ac) 2	11,000	3439
Navarro Oil Co., W. P. Brightwell (50-ac) 5	6500	3658
A. G. Oliphant et al (was Selby-Lewis), B. B. Peterson (80-ac) 4	12,000	3622

For Tabulation and Comparison See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
W. P. Perkins et al, Nolan-Bean (3.13-ac) 1	8000	3628
Sinclair O&G Co., M. T. Cole (666-ac) 15	6500	3697
A. A. King (111-ac), Tract No. 2, 3-B	8300	3455
Smith & Bohlssen, M. R. Terrell 1	8000	3639
Stanolind O&G Co., Wm. Clayton (50-ac) 1	12,000	3566
Stanolind-Simms Oil Co., A. W. Miller (100-ac) 1	*	3609
Sun Oil Co., J. R. Beall (180-ac) 7	8000	3607
C. H. Hilburn-Chas. Lloyd (133.7-ac) 11	10,000	3666
The Texas Co., W. Baxter (50-ac) 2	10,500	3663
Tidal Oil Co., J. Bean 3	9500	3579
W. P. Moore (135-ac) 5	4000	3720
LONGVIEW AREA—		
Adams & Lyle, T. Anderson (62-ac) 2	11,000	3498
Alco Royalty Corp., King (10-ac) 1-A	9500	3614
W. D. Ambrose et al, A. J. Green (20-ac) 2	10,000	3601
Amerada Pet. Corp., E. Burnside (100-ac) 1	9000	3525
J. Freeman (28-ac) 2	8500	3732
L. R. Hearne (108-ac) 2	6000	3517
Tuttle (48-ac) 1	8000	3521
Arkansas Fuel Oil Co., J. C. McKinley (50-ac) 1-C	9200	3620
Arkansas & Yount-Lee Oil Co., F. K. Lathrop (96-ac) 8-A	8000	3611
F. K. Lathrop (96-ac) 9-A	6500	3588
Atlantic Oil Prod. Co., J. M. Moore (434-ac) 1	8500	3566
Badgett-Cooper Drlg. Co., C. C. Clemens (30.7-ac) 2	10,000	3639
California Pet. Corp. of Ven., W. F. Glenn (28-ac) 1	8400	3644
Mrs. I. Walker (120-ac) 4	9000	3652
Cox & Jake Hamon, Jr., E. Lacy (50-ac) 1	4500	3545
Cranfill-Reynolds Co., R. C. Barnswell (150-ac) 2	11,000	3490
D. A. Porter (109-ac) 4	15,000	3660
Dimham Oil Corp., McGrede (10-ac) 2	9000	3677
Paul Doran et al, Bingham (3-ac) 1	7500	3597
Empire Gas & Fuel Co., Joe Bander 3	10,000	3631
L. A. Jeter (121-ac) 3	9000	3599
F-H-E Oil Co., B. C. Christian (87-ac) 3	11,000	3651
G. & A. Oil Co., R. R. Collins (10-ac) 2	10,000	3656
Gregg Oil Co., T. & P. Fee (43-ac) 2	11,000	3540
Grisham-Hunter Corp., T&P Fee (2-ac) 1-C	12,000	3628
Gulf Prod. Co., M. O. Sheppard (300-ac) 4	9500	3511
M. O. Sheppard (300-ac) 5	11,500	3511
Hankamer & Lee, C. Jones (5-ac) 1	7200	3660
Humble O&R Co., T. B. Harris (175-ac) 3	8500	3545
Invincible Oil Co., C. Jones (19-ac) 1	12,000	3680
Johnson et al, John Hargraves (50-ac) 1	2000	3712
Lucey Pet. Co., M. B. Fisher (65-ac) 2	11,000	3550
Magnolia Pet. Co., Clarence Davis 5	10,000	3593
N. W. Blackwell (90-ac) 2	8700	3666
L. E. Orms (16.3-ac) 2	9500	3581
Mansion Oil Co. (C. M. Becker), T. A. Webb (343¼-ac) 2	7000	3709
Margay Oil Corp., T. J. Christian (24.7-ac) 1	9500	3709
Mullendore & Berry, G. Anderson (25-ac) 1	9600	3526
Nash & Windfohr Oil Corp., B. Jones (30-ac) 1	12,000	3648
Petroleum Finance Corp.-Simms Oil Co., A. M. Kinsell (23-ac) 1	9000	3679
B. F. Phillips et al, Fee (1-ac) 1	8500	3600
Prairie O&G Co., I. Isley (100-ac) 4	7000	3499
Reeser-Pendleton, Inc., A. Christian (31-ac) 2	12,000	3610
J. T. Hopkins 1	10,000	3553
Shasta Oil Co., E. G. Richie (24-ac) 1-B	9500	3577
Shell Pet. Corp., W. T. Burnside (60-ac) 2	10,000	3549
C. C. Landers (107-ac) 5	5000	3729
Sabinas Oil Corp. (was Falvey), T. M. Collins (126-ac) 4-C	9000	3711
J. W. Falvey (58½-ac) 3	10,000	3740
E. A. Showers et al, T. Snoddy (6-ac) 1	8000	3605
Sinclair O&G Co., M. Moncrief (251.3-ac) 13	8500	3604
M. Moncrief (251.3-ac) 14	8500	3565
Stanolind O&G Co., B. Jones (27-ac) 1	7000	3682
Stanolind-Simms Oil Co., P. McGeorge (100-ac) 2	8300	3479
Sun Oil Co., E. C. Shoults (100-ac) 2	7000	3672
D. G. Sparks (50-ac) 1	6000	3663
Superior Oil Co., L. C. Ingram (162-ac) 2	12,000	3565
The Texas Co., E. M. Woods (90-ac) 4	6000	3588
C. S. Thomas et al, C. B. Everett (20-ac) 2	7500	3502
Trico Oil Co., A. D. Adkins (6-ac) 1	9000	3765
Fox Wood et al, J. I. Morgan (Blk. 4) 1	6500	3623
Wrightsman Oil Co., G. E. Adams (34-ac) 2	9000	3582
Yount-Lee Oil Co., J. D. Davis (83-ac) 3-A	8000	3596
J. Flemister (60-ac) 3	7500	3616

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Empire Gas & Fuel Co. (Cities Service), Polling 1,	¶123¼	2725
Texoma Nat'l Gas Co., McLaughlin 1	¶40	2575
GRAY COUNTY—		
J. Alvin Gardner et al, Barrett 1	165	3276

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CALLAHAN COUNTY—		
Kingswood et al, Fowler 1	*	2030
COLEMAN COUNTY—		
Centennial O&G Co., Newton 5-A	1000	3864
EASTLAND COUNTY—		
W. J. Fiensy et al, Dunham 1	*	1207
PALO PINTO COUNTY—		
Burton & McKee et al, Strawn Coal Co. 1	¶12½	2995
Gibson et al, Pollard 1	¶5½	2998
SHACKELFORD COUNTY—		
Wistex O&G Co., Goodwin 2	20	1975

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
PECOS COUNTY—		
McCurdy et al, J. H. Tippett-Shell 1	130	1457
WARD COUNTY—		
Rickford & Smith, M. L. Johnson 2	50	2204

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Deep Oil Dev. Co.-Lindsey Drlg. Co., L. F. Wilson 1, Sec. 119	800	2212
COOKE COUNTY—		
Hutton-Hess et al, E. A. Marty 1	*	1102
WICHITA COUNTY—		
C. P. Shelton et al, Kinkerman 1	*	2107
YOUNG COUNTY—		
Jack Anthony et al, Robinson (Sec. 1650) 1	*	796
Beavers et al, Belknap (Sec. 22) 2	25	701
Belknap (Sec. 22) 4	20	670
Belknap Coal Co., Fee (Sec. 22) 9	55	710
Fee (Sec. 22) 11	35	716
H. Y. Oil Co., Larimore (Sec. 2247) 4	75	708
King Royalty Co.-Phillips Pet. Co., Larimore (Sec. 2246) 26	45	714
Larimore (Sec. 2246) 28	*	751
Larimore (Sec. 2246) 29	240	662
Kleiner & Riggs, Larimore (Sec. 22) 3-B	*	767
C. C. Mason et al, Jeffrey (Sec. 44) 1	*	845
Jeffrey (Sec. 46) 1-B	*	834
Petroleum Producers Co., Haygood (Sec. 1468) 1	*	742
R. Seitz et al, Finch (Sec. 31) 4	50	637
Finch (Sec. 31) 5	*	703
Willis et al, Belknap (Sec. 22) 7	50	641
L. V. Wood et al, Brooks (Sec. 637) 1	*	505

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BEE COUNTY—		
Lefevre & Buchanan's Ray 1 (wo)	500	3897
DUVAL COUNTY—		
SR&C & Vacuum's Duval Ranch Co. 5	250	1737
The Texas Co.'s Bishop Cattle Co. 3	500	2354
GUADALUPE COUNTY—		
R. S. Bolling's Linne 1-B	*	1887
JIM WELLS COUNTY—		
Larero Gas & Pet. Co.'s Wade 2	¶50	2931
KARNES COUNTY—		
United N. & S. Dev. Co.'s Morrell 1	*	2787
NUECES COUNTY—		
L. L. Smith's Alexander 1	*	5357
STARR COUNTY—		
Los Olmos O&G Co.'s Seabury et al 1	*	390
San Marcos Drlg. Co.'s Ivey 1	*	515
TRAVIS COUNTY—		
Speed, Bass & Fuch's Nagel 1	*	900
ZAPATA COUNTY—		
O. W. Killam's Cuellar 31-A	75	1539
Cuellar 45-B	100	1559
Newton, Owens & Evans' Garza 1	¶15	1758
M. D. Slator's Slator 1	*	1563

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Nat Hunter Prod. Co., Kirby H-8	1850	4400

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
LAKE PELTO—		
The Texas Co., State Lake Pelto 6	*	2655

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
RICHLAND PARISH—		
Southern Carbon Co., Rosengrant & Ducomb 7, 24-17-5e	¶12½	2440
United Gas Pub. Serv. Co., Faust 1, 13-17-5e	¶18	2425

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
UNION COUNTY (Smackover)—		
Boling & McLeon, L. D. Neely 1, 23-15-16	50	2112

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
Shell Oil Co., Stakemiller 8	225	4910
VENTURA AVENUE—		
Associated Oil Co., V. L. W. 18A	1400	7000
McGonigle 9	600	7100

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CREEK COUNTY—		
D. D. Mickleson, Clover 1, cnl nw ne 6-17-11e	*	2696
OKLAHOMA COUNTY—		
Slick Estate, Classen 5, sw se nw nw 2-11-3w (4 hrs.)	3050	6175
Denver P&R, King 2, c e½ nw sw nw 3-11-3w (7 hrs.)	12,100	6395
Slick Estate, Central 3, nw c se se se 3-11-3w (10 hrs.)	270	6248
Slick Estate, Central 5, nw c ne se se 3-11-3w	500	6252
I.T.I.O., Ivanhoe 2, sw ne ne 15-11-3w (4 hrs.)	195	6345
OKMULGEE COUNTY—		
Trident Oil, Harris 7, csl ne ne 1-14-14e	10	1679
W. B. Pine, Shepard 4 (owd), nw c 29-12-14e	¶5	3026
PAYNE COUNTY—		
Wood Oil Co., Curley-Chief 1 (owd), sw c se 33-19-5e	*	3792

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
ELLIS COUNTY—		
Davis, Hazlett et al, Wieland 1 (owd), ne c 1-13-16w	165	3037
FORD COUNTY—		
Carter Oil Co. et al, Everett 1, c ne, 22-29-21w	*	6206
FRANKLIN COUNTY—		
Fielder and Whiteside, Huddleston 1, ne c nw 30-16-17e	*	1255
McPHERSON COUNTY—		
Mid-Kansas O&G, Unruh 2, sw c 25-19-2w	2470	3366
Harris and Haun, Bair 1, nw c ne 28-19-1w	¶10½	2917
Twin Drlg. Co. et al, Gratton 1 (owd), sw c se 19-19-1w	795	3424
Abilene Oil Co. et al, Hindmarsh 1, sw c 20-19-1w	810	3425
RUSSELL COUNTY—		
The Texas Co., Jacobs 1 (owd), sw c 31-12-15w	175	3040

EASTERN STATES

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MORGAN COUNTY—		
Davis Oil Co., Kincaid 31	¶¼	253
WASHINGTON COUNTY—		
Anderson Co., Greenlees 5	¶¼	1214

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ASHLAND COUNTY—		
Commonwealth Gas Corp., Phillips 1	*	
BELMONT COUNTY—		
Washmuth, Callahan & Co., Butler 1	¶¼	1903
Peters, Purdy & Co., Wheatley 2	¶¼	1969
FAIRFIELD COUNTY—		
City Natural Gas Works, Brucker 2	*	583
GUERNSEY COUNTY—		
W. B. Urban & Co., Brock 2	¶¼	1123
George McLaughlin, Mehaffey 1	¶¼	1102
KNOX COUNTY—		
Emerald Petroleum Co., Hoagle 1	*	603
MUSKINGUM COUNTY—		
Ohio Fuel Gas Co., Mangold 1	¶¼	3921
W. H. Atha, Atha 5	¶½	3523
MEIGS COUNTY—		
Scioto Oil & Gas Co. 1	¶½	892
A. N. Bengel & Co., Diehl 1	¶½	877
Ohio Fuel Gas Co., Cuckler 4	¶¼	412
Ohio Fuel Gas Co., Lee 1	¶¼	527
STARK COUNTY—		
East Ohio Gas Co., Fawcett 2	¶5	4285

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
DRAKE COUNTY—		
Adrian Tester, Miller 1	¶1	
HANCOCK COUNTY—		
L. Cramer, Ernst 4	20	
HENRY COUNTY—		
Lake Shore & Southwestern Metal Co., Jones 1	¶¼	
LUCAS COUNTY—		
Dillon & McFrederick, Butz 1	5	1400
Dillon & McFrederick, Teft 1	30	1398
Dillon & McFrederick, Teft 2	15	1400
SENECA COUNTY—		
Recovery Oil & Gas Co., Haines 1	¶¼	1431
Neath & Geddis, Bloomfield 1	¶¼	
Neath & Geddis, Bloomfield 2	¶¼	
McKinney Bros., Martin 2	¶¼	
J. H. Murphy & Sons, Getuldig 4	¶¼	
SHELBY COUNTY—		
Rucker Oil Co., Gaffena 3	10	
WYANDOT COUNTY—		
McPherson & Co., Bowman-Brillhart 1	¶1	1369
Temple & Kennedy, Flaxonhead 1	*	
O'Neal & Co., Neiderkoker 1	¶¼	1348
O'Neal & Co., Fruth 1	*	1355

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
GRATIOT COUNTY—		
Wittmer Oil & Gas Co., Zimmerman 1	¶1	
WAYNE COUNTY—		
Berry Corner Oil & Gas Co., Berry 1	*	125
D. W. Ross, Ross 1	*	118
Bertchinger, Bertchinger 1	*	104
Ira Riggs, G. E. LeVeque 1	*	252

(P. S.—No competions in Pennsylvania, New York, Indiana and Illinois.)

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Brenner, Adams & Co., Williams 1	100	637½
HART COUNTY—		
Perkins & Co., Wilson 1	50	
Carpenter & Co., Coffee 1	40	
OHIO COUNTY—		
S. R. Berry & Co., Coleman 5	25	
James C. Ellis, Tally 5	35	
WEBSTER COUNTY—		
Security Oil & Gas Co., Curry 6	¶1¼	
Security Oil & Gas Co., Harkins 1	¶¾	

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CALIFORNIA

HUNTINGTON BEACH—Vaqueros Major Oil Co., No. 1A, 32-5-11. Huntington Signal Oil Co., No. 8, 2-6-11.

KETTLEMAN HILLS—Associated Oil Co., Whepley 3, 35-21-17. Standard Oil Co., No. 25, 23-22-18.

KINGS COUNTY — Irma Investment Co., Watson 2, 7-23-20. Valley Exploration Co., No. 5-18, 18-23-20.

ROUND MOUNTAIN — Golden Bear Oil Co., No. 7, 6-28-29.

VENTURA COUNTY—Simi Oil Co., Hearst 2, 18-1-17.

KANSAS

ELLIS COUNTY — Davis, Hazlett et al, Wieland 2, (owd) nw ne ne 1-13-16w.

ELLSWORTH COUNTY—Raymond Gear et al, Sanberli 1, c sw se 29-16-9w.

MORRIS COUNTY—Cress et al, Peterson 1, c ne sw 33-16-7e.

RUSSELL COUNTY—The Texas Co., Leonard 1, (owd) nw c 6-13-15w.

OKLAHOMA

CREEK COUNTY—A. B. Ice, Jacanta 1, ne c nw ne 19-17-10e. Curtis Oil Co. et al, Adams 1, se c sw se 18-17-10e.

JEFFERSON COUNTY—O. V. Beck, Seay 1, sw c nw se 34-6s-5w.

LATIMER COUNTY — Choctaw Gas Co., Fitzgerald 1, c nw nw 1-6-22e.

LOVE COUNTY—Chas. Vanvleck, Sheldon 1, ne se sw 14-8s-2w.

MUSKOGEE COUNTY—R. B. Hash et al, Barnett 1, ne c sw 35-16-15e. C. F. Finefield et al, Rentie 2 (owd) se c sw ne nw 9-15-18e. Dunbar and Urban, Rowsey 1, cwl nw nw 10-15-18e.

OKLAHOMA COUNTY — Anderson, Kerr and Continental, St. Louis 1, ne nw sw se 35-12-3w. Slick Estate, Terminal 3, sw se nw 3-11-3w. Slick Estate, Terminal 4, c n½ se sw nw 3-11-3w. Slick Estate, Terminal 5, ne c sw sw nw 3-11-3w.

PONTOTOC COUNTY—Barnsdall Oil Co. et al, Hart 1, nw c 27-5n-6e.

POTTAWATOMIE COUNTY—C. W. James et al, Mount 1, sw c 35-7n-4e.

STEPHENS COUNTY — W. H. Smith, Ridgeway 1, ne c nw se 17-3s-4w.

TEXAS

ARCHER COUNTY — W. E. Maxon, Jr., Wichita Falls, F. C. Green, 320, 11, J. Lewis sur, 274 ft from n and 1133 ft from e line. Thos. Holcombe et al, Wichita Falls, M. E. Chiles, 40, 1, DCSL sur, 660 ft from s and e lines of blk 19. Cullum & Alexander, Wichita Falls Falls, C. S. L., 50, 2, Falls CSL sur, 525 ft from e and 1063 ft from s li blk 14. F. P. Cullum et al, Wichita Falls, W. J. Logan, 60, 1, J. M. Taylor sur, 150 ft from s and e lines. Cullum & Alexander, Wichita Falls, Falls C. S. L., 100, 1, S 1, Falls CSL sur, 500 ft from w and 150 ft from s li blk. 1.

BEE COUNTY—H. H. Weinert, San Antonio, G. W. Ray, 14, 1, J. W. Williamson sur, 150 ft from w and 265 ft from n line. Houston Oil Co., Houston, J. F. Portis, 288, 2, A. Smalley sur, 150 ft from n and 330 ft from w line.

BEXAR COUNTY—C. L. Witherspoon, San Antonio, J. Ramzinski, 80, 2, J. W. Riall sur, 875 ft from e and 403 ft from s line.

BROWN COUNTY — American Maracaibo Co., Big Springs, Cross, 24, 1, No. 624 J. Mc. Kinney sur, 1629 ft from n and 277 ft from e line.

CALLAHAN COUNTY — M. A. Hardie, Cross Plains, C. C. Waterman, 100, 1H, No. 181 CCSL sur, 805 ft from n and 1500 ft from e line blk 54.

CALDWELL COUNTY—Detroit Texas Dev. Co., Luling, Dunlap, 35, 2, S. Seal sur, 200 ft se of No. 1.

CHAMBERS COUNTY—Mills Bennett Prod. Co., Houston, J. F. Wilburn, 10, 6, H. Griffith sur, 125 ft w of No. 5; Gulf Fisher, 23, 5, Wm. Bloodgood sur, 191 ft w of No. 4. Gulf Prod. Co., Houston, J. F. Wilburn, 32, 6, H. Griffith sur, 330 ft sw of No. 3.

DEAF SMITH COUNTY—Western Union Oil Co., Amarillo, F. C. Farwell, 160, 1, S 18, Twp. 3, Rge. 2, center of nw of sec.

DUVAL COUNTY—Duval Oil Corp., San Antonio, Bishop, 320, 6, S 135, GB&CNG sur, 1979 ft from w and 1008 ft from s line of n½ of sec.

EASTLAND COUNTY — C. E. Edwards, Eastland, T. Harrell, 40, 4, S 6, B 6, E. T. Ry. sur.

FALLS COUNTY—Vasser & Carruth, Chilton, Z. Farias, 100, 1, J. A. Manchaca sur, 889 ft from n and 190 ft from w line.

GREGG COUNTY—Badgett & Cooper Drilling Co., Longview, T. M. Collins, A, 24, 2, C. W. Hooper sur, 350 ft from w and 324 ft from s line. Bailey & Trimble, Eldorado, Ark., G. Jones, 15, 2, Hooper sur, 330 ft from s and e lines. C. M. Joines, Fort Worth, E. L. Walker, 3, 1, M. Dillard sur, 60 ft w of center of e line of blk 54. Lee & Phillips, Gladewater, E. M. Wood, 4, 1, L. J. Rigsby sur, 140 ft from n and 330 ft from e line. I. L. Brin, T. Enoddy, 3, 1, Wm. Robinson sur, 193 ft from w and 219 ft from s line. Artic Oil Co., Fort Worth, R. H. Rowland, 6½, 1, M. Van Winkle sur, 300 ft from n and 346 ft from e line. W. D. Ambrose, Longview, Geo. Jones, 40, 4, G. W. Hooper sur, 660 ft n of No. 1. Gilcrease Oil Co., Tulsa, Okla., A. Tooke, 29, 1, W. C. Wakeland sur, 354 ft from w and 330 ft from s line. Imperial Pet. Co., Dallas, W. C. Shoults, 21, 2, M. Irwin sur, 300 ft from n and 330 ft from e line. E. J. Hendon, Kilgore, W. C. Griffin, 1, 1, M. Van Winkle sur. S. A. Guiberson, Jr., Dallas, J. Hopkins, 8, 1, W. H. Castleberry sur. Clinton Hensley, Marshall, Fee, 6, 1, Jno. Ruddle sur. R. P. Bates, Tulsa, Okla., S. Kay, 3, 1, L. J. Rigsby sur. Donald Marr et al, Corsicana, G. W. Richey, 5, 1, Wm. Carlton sur, 440 ft from e and 150 ft from s line. Sakaba Oil Corp., Inc., Shreveport, La., Hickman-Baird, 1, M. Dillard sur, 80 ft from w and 100 ft from s line. W. P. Luse, Dallas, Stateland, 48, 1, E. L. Walker sur, 330 ft from s and e lines; 2, 660 ft w of No. 1; 3, 660 ft from w and 330 ft from s line. W. R. Jones, Longview, Satterwhite, 13, 2, M. Irwin sur, 330 ft from n and 234 ft from w line. J. C. Robbins, Longview, Geo. Boyd, 1, 1, H. R. Hokit sur, 265 ft from w and 45 ft from s line. Weaver-Crim Corp., Longview, B. B. Peterson, 60, 2, J. S. Caruthers sur, 560 ft from e and 550 ft from s line. J. L. Murray, Gladewater, Gladewater 1, 1, blk 15, H. R. Hokit sur, 195 ft from n and 158 ft from e line. L. W. Tarkenton, Dallas, O. R. Johnson, 1, 1, L. J. Rigsby sur, 198 ft from n and 425 ft from w line. H. E. Grisler, Gladewater, Fee, 1, 1, W. G. Painter sur, 105 ft from n and e lines. Pilot Oil Co., Dallas, J. M. Johnson, 11, 2, M. Van Winkle sur, 150 ft from e and 225 ft from s line. J. R. Ostrom, Kilgore, Fee, 1½, 1, M. Van Winkle sur, 100 ft from n and 150 ft from w line. Shano Oil Co., Longview, J. T. Hopkins, 31, 1, Wm. Castleberry sur, 206 ft from s and w lines. Gregg Oil Co., Gladewater, T. & P., 4, 1, J. Ruddle sur, center. Wrather & Stegall, Kilgore, A. Prothro, 1, 1, M. Van Winkle sur, 106 ft from s and e lines. Sneed Bros., Tyler, Rogers, 15, 1, Hampton & Wakeland sur, 200 ft from n and 330 ft from e line. J. O. Whittington, Longview, Center Baptist Ch. 3, 1, W. H. Castleberry sur, 220 ft from n and 168 ft from e line. M. J. Mann, Longview, I-GN, 4, 1, M. Van Winkle sur, center. Iowa Payne Oil Co., Marshall, Jno. Elder, 10, 2, Wm. McCurry sur, 156 ft from w and 330 ft from s line. Chas. A. Parkin, Tulsa, Okla., L. M. Colburn, 35, 1, H. H. Hathaway sur, 301 ft from n and 234 ft from w line. T. S. Schroeder, Dallas, J. C. Bumpas, 26, 2, W. H. Castleberry sur, 330 ft from n and 350 ft from e line. King & Massengill, Longview, E. T. Anderson, 13, 2, G. W. Hooper sur, 185 ft from s and 150 ft from w line. Abernathy & Kirkpatrick, Tyler, J. H. Victory, 4, 1, H. R. Hokit sur, nw cor of blk 29. Texas Co., Shreveport, La., W. A. Baxter, 96, 2, M. Scott sur, 81 ft from n and 350 ft from w line; J. Waddle, 27, 1, H. R. Hokit sur, 275 ft from s and 1120 ft from e line. Magnolia Pet. Co., Dallas, J. W. Free, 169, 12, G. W. Hooper sur; C. Davis, 66, 6, H. Hathaway sur, 330 ft from n and 306 ft from e line; S. Griffin, 44, 6, M. Van Winkle sur; J. C. McKinley, 41, 5, D. Sanchez sur; J. King, 33, 3, W. P. Chisum sur, 590 ft from n and 104 ft from e line; J. C. McKinley, 41, 5, D. Sanchez sur, 330 ft from n and e lines; C. Davis, 66, 6, H. Hathaway sur, 330 ft from n and w lines; L. A. Griffin, 44, 5, M. Van Winkle sur, 660 ft se of No. 3; 7, 120 ft from w and 131 ft from s line. Sinclair Oil & Gas Co., Fort Worth, M. Moncrief, 307, 19, W. H. Castleberry sur, 218 ft s of center of n line; 16, 200 ft from n and 734 ft from w line; A. A. King, B, 337, 8, A. Cormack sur, 639 ft e of No. 7; 7, 660 ft n of No. 4. Gulf Prod. Co., Houston, W. Holt, 201, 3, Jno. Blair sur, 290 ft from w and 330 ft from n line; S. Hilburn, 561, 3, L. B. Outlaw sur, 1162 ft from w and 240 ft from s line; G. Davis, 50, 2, W. P. Chisum sur. Atlantic Oil Co., Dallas, M. C. Satterwhite, 82, 5, W. H. Castleberry sur, 225, ft w of center of e line; J. M. Haynes, 202, 6, G. A. Thomason sur, 914 ft from n and 275 ft from w line; M. C. Satterwhite, 82, 6, W. H. Castleberry sur, 330 ft from n and 216 ft from e line. Howard Pet. Co., Tulsa, Okla., Mrs. A. Davis, 47, 1, W. G. Painter sur, 330 ft from n and w lines. T. P. Coal & Oil Co., Fort Worth, Fee, 3, G. Hampton sur, 200 ft from n and 250 ft from e line. Humble Oil & Ref. Co., Houston, M. Wells, 70, 3, M. Irwin sur, 753 ft w of No. 1. A. L. Hughes, 91, 5, Hampton-Wakeland sur, 200 ft n of center of s line; T. B. Harris, 175, 5, W. H. Castleberry sur, 345 ft from e and 330 ft from s line; Amerada Pet. Corp., Tulsa, Okla., corrected location, A. Tooke, 60, 2, W. G. Painter sur, 250 ft from s and w lines; J. M. Tuttle, 48, 2, W. H. Castleberry sur, 990 ft from n and 330 ft from w line; 3, 330 ft from n and 250 ft from w line. Stanolind Oil & Gas Co., Longview, M. Lemaire, 38, 2, M. Hathaway sur, 330 ft from s and e lines; J. J. Flewellen, 400, 2, M. Mann sur, 330 ft from e and 224 ft from s line; J. C. Persons, 146, 8, Wm. Castleberry sur, 330 ft from n and 2160 ft from e line; 7, 1930 ft from e and 330 ft from s line. Prairie Oil & Gas Co., Ranger, I. Isley, 6, G. R. Rains sur, 330 ft from s and w lines. Weaver-Crim Co., Longview, B. Peterson, 60, 1, J. S. Caruthers sur, 294 ft from w and 330 ft from s line. Navarro Oil Co., Houston, T. B. Harris, 80, 2, W. H. Castleberry sur, 150 ft from s and w lines. Roeser & Pendleton, Inc., Fort Worth, B. Rodden, 32, 4, Wm. Robinson sur, 166 ft from w and 298 ft from s line. Vacuum Oil Co., Houston, Stinchcomb, 111, 1, W. H. Hart sur, 52 ft from e and 330 ft from s line. Continental Oil Co., Fort Worth, B. C. Todd, 40, 2, Wm. Castleberry sur, 330 ft from e and 299 ft from s line. E. L. Foshee, Sherman, Fee, 2½, 1, H. R. Hokit sur, 265 ft from e and 110 ft from n line. Fain-McGaha Oil Corp., Wichita Falls, R. Corbin, 40, 2, H. H. Edwards sur,

For Tabulation and Comparison See Market Section

200 ft from e and 330 ft from s line. Republic Prod. Co., Longview, J. B. Watson, 23, 2, M. Van Winkle sur, 250 ft from e and 330 ft from s line. Cranfill & Reynolds, Houston, Wm. Anderson, 83, 2, P. McAnelly sur, 330 ft from w and 660 ft from e line; 3, 660 ft n of No. 2; S. S. Barton, 46, 3, D. Sanchez sur, 330 ft from s and e lines; F. T. Rembert, 88, 3, J. Ruddle sur, 330 ft from s and w lines; G. Anderson, 8, 1, P. McAnelly sur, 660 ft w of No. 1; J. M. Blackman, 36, 3, W. P. Chisum sur, 330 ft from n and w lines. Byrd-Frost, Inc., Longview, J. A. King, 15, 1, W. P. Chisum sur, 350 ft from e and 450 ft from s line; M. B. Hughey, 110, 1, L. B. Outlaw sur, 330 ft from s and w lines; 2, 1002 ft n of No. 1; 3, 330 ft from n and w lines. Shell Pet. Corp., Dallas, P. M. Bates, 65, 3, M. Van Winkle sur, 318 ft from n and 306 ft from w line. East Texas Ref. Co., Dallas, D. Caldwell, 80, 3, J. Ruddle sur, 50 ft from n and 30 ft from w line. A. D. Robinson, Dallas, F. Elder, 7, 1, J. Wilkinson sur, 330 ft from e and 182 ft from s line. Alco Royalty Corp., Marshall, A. N. King, 24, 2, G. A. Thomason sur, 400 ft from s and e lines. Columbia Oil & Gas Co., Dallas, Christian, A, 20, 1, H. Hathaway sur, 330 ft from w and 342 ft from s line. Artic Oil Co., Fort Worth, G. C. Utzman, 2, 1, M. Van Winkle sur, 162 ft from n and 125 ft from e line. Yount-Lee Oil Co., Beaumont, F. Jones, 51, 2, Wm. Castleberry sur, 330 ft from s and w lines; 3, 330 ft from n and e lines; L. E. Orms, 56, 3, Wm. Castleberry sur. Lucey Pet. Co., Longview, M. Fisher, 65, 3, Wm. Castleberry sur, 850 ft from n and 330 ft from w line. Fleming & Kimble Corp., Fort Worth, J. Barnes, 30, 2, G. W. Hooper sur. Arkansas Fuel Oil Co., Shreveport, La., W. J. Hestand, 36, 4, D. Sanchez sur. L. E. Orms, 56, 3, W. H. Castleberry sur, 330 ft from n and e lines. C. C. Peterson, Tyler, Morton-Dickson, 1, 1, M. Van Winkle sur, center. Tidal Oil Co., Fort Worth, W. D. Lacy, 80, 1, E. H. Grisham sur, 330 ft from n and 150 ft from e line; M. G. Barton, 194, 4, S. P. Hollingsworth sur, sw corner. Everts Drilling Co., Dallas, P. E. Barton, 2, 1, M. Van Winkle sur, 120 ft from w and 100 ft from s line. Fain-McGaha Oil Corp., Wichita Falls, W. A. Bouknight, 53, 2, H. H. Edwards sur, 330 ft from s and w lines.

GUADALUPE COUNTY—M. W. Eiser, San Antonio, C. M. Wells, 160, 1, J. D. Baume sur, 150 ft from n and w lines.

HARDIN COUNTY — Rio Bravo Oil Co., Houston, Fee, 158, V120B, J. F. Cotton sur, 180 ft w of No. 116A.

HOWARD COUNTY—Cardinal Oil Co., San Angelo, W. R. Settles, 20, 3, S 6, B 32, T&P sur, 350 ft s of center of n line.

JACK COUNTY—J. M. Seaberry, Holiday, E. J. Shaver, 40, 1, B 1, L 143, HCSL sur, 150 ft from n and w li se¼.

LIBERTY COUNTY—M. Manning, Houston, R. Sergent, 364, 1, Jas. McFadden sur, ne corner.

NUECES COUNTY — Houston Oil Co., Houston, T. M. Harrell, A, 333, A1, H. B. Sheppard sur, 330 ft from n and e line. A. C. Erwin, Corpus Christi, C. M. Trott, 1, 1, No. 416-500 sur.

PALO PINTO COUNTY—F. L. Walker, Strawn, C. E. Binnings, 1, Strawn sur, center of Blk. 14.

RUSK COUNTY — Barney-Cockburn, Henderson, Green, 108, 1, Hussner sur, 330 ft from s and e lines. W. F. Benoni, Tyler, E. B. Alford, 5, 1, T. J. Moore sur, 400 ft from n and 150 ft from w line. East Shore Oil Co., Henderson, T. Fox, 40, 2, A. Cormack sur, 330 ft from s and e lines. M. Risinger, Mansfield, La., M. H. Barton, 1, Blk 13, Overton, sur, 135 ft from e and 170 ft from s line M. J. Mann, Longview, I-GN, 4, 1, I. Ruddle sur, center. Rassmussen & Burton, Tyler, F. J. Cox, 10, 1, R. H. Penney sur, 360 ft from e and 298 ft from s line. Nivla Oil Corp., Overton, W. B. Brannon, 10, 1, W. G. Tutt sur. Merry Bros. & Perini, Tyler, J. M. Price, 8, 1, B 37, J. B. Cadena sur, 144 ft from n and 330 ft from e line. W. A. McLeod, Dallas, C. D. Edmondson, 5, 1, J. T. McDaniel sur, center. Caruthers Oil Co., Dallas, Deason, 5, 1, J. Ximinez sur, 345 ft from e and 158 ft from s line. Geo. Guthrie et al, San Antonio, G. H. Morris, 33, 2, W. R. Cook sur, 344 ft from n and 333 ft from e line. Albert Plummer, Houston, Beall Est., 79, 2, W. M. Chisum sur, 330 ft w of center of e line. J. O. Griffith, Fort Worth, S. E. Brocks, 10, 1, T. Grace sur, 287 ft from e and 379 ft from n line. A. G. Oliphant, Longview, J. S. Powers, 16, 1, Jno. Womack sur, 380 ft from n and 330 ft from e line. Tulsa Oil Co., Tyler, S. Warren, 12, 1, J. Womack sur, 245 ft from w and 478 ft from s line. D. J. Simmons, Fort Worth, M. A. Thrash, 1, 1, F. Cordova sur, center. Duncan & Holt, Dallas, R. A. Motley, 37, 1, Cordova sur, 150 ft from n and 330 ft from e line. Darby Pet. Co., Tulsa, Okla., C. O. Christian, 97, 2, M. McCabe sur, 821 ft from e and 330 ft from s line. R. J. McMurray, Henderson, A. D. Blackwell, 42, 2, M. J. Pru sur, 330 ft from s and e lines. R. M. V. Oil Co., Henderson, Flannagan, 33, 1, B 29, M. J. Pru sur, 330 ft from s and e lines; J. A. Birdwell, 148, 5A, M. J. Pru sur, 500 ft e of No. 4. Falcon Co., Fort Worth, A. K. Perkins, 76, 1, J. B. Cadena sur, 190 ft from n and 480 ft from e line. Texas Consolidated Oil Co., Breckenridge, Williams, 3, 1, W. G. Tutt sur, center. Arnett, Keeling & Adams, Kosse, Mt. Comfort Ch. 2, 1, H. Hobson sur, Snetcher & Pittman, F. J. Cox, 36, 1, R. H. Penney sur, 330 ft frm e and 175 ft from n line. W. W. Hinchcliffe, Mexia, L. J. Pinkston, 4, 1, J. B. Cadena sur, 150 ft from n and 330 ft from e line. W. F. Bezoni, Tyler, E. B. Alford, 5, 1, T. J. Moore sur. T. W. Murray, Overton, L. Gibson, 2, 1, G. W. Tutt sur, 125 ft from n and 156 ft from e line; Mindr, 3½, 1, G. W. Tutt sur, 125 ft from n and 300 ft from e line. Wilson-Brown Co., Kilgore, Terrell, 24, 2, Sevier sur, 266 ft from w and 330 ft from s line. Olsan Bros., Henderson, J. S. Powers, 131, 2, J. Womack sur, 370 ft from n and 1650 ft from e line. Roy I. Carter, Tyler, H. C. Maxwell, 27, 2, F. Cordova sur, 660 ft nw of No. 1. Burton Drilling Co., Longview, E. B. S. Florey, 50, 3, P. W. Holmes sur, 250 ft from n and e lines. Atkinson & Sandefer Oil Corp., Breckenridge, Overton Sch. 4, 1, J. Lindley sur, 208 ft from s and e lines. T. A. Johnston, Tyler, Kilgore, 1, M. Van Winkle sur, center of Blk. 1. L. G. Bradstreet, Ft. Worth, H. C. Minor, 30, 1, Wm. Killen sur, 2228 ft from n and 330 ft from e line. Humble Oil & Ref. Co., Houston, M. E. Minor, 120, 4, Wm. Killen sur, 222 ft from n and 330 ft from e line; O. R. Holt, 41, 3, S. P. Hollingsworth sur, 215 ft from e and 247 ft from sw line; M. Kangera, 35, A17, M. J. Pru sur, 625 ft from e and 140 ft from s line; J. Bell, 92, 2, S. P. Hollingsworth sur, 453 ft from n and 330 ft from w line; B. Peterson, 50, 1, J. Lewis sur, 2173 ft from w and 330 ft from s line; J. E. B. Sneed, 104, 1, A. Melton sur, 330 ft from e and 990 ft from s line; J. T. Sexton, 310, 1, M. McCabe sur, 330 ft from w and 1070 ft from s line; J. White, 43, 1, J. M. Scott sur, 330 ft from s and w lines; C. Pilgreen, 70, 2, J. M. Barton sur, 330 ft from n and w lines. H. L. Hunt, Tyler, S. Wilson, 5½, 2, Geo. Berry sur, 360 ft from w and 150 ft from s line. Republic Prod. Co., Longview, C. E. Christian, 50, 4, R. W. Smith sur, 330 ft from n and w lines. Gulf Prod. Co., Houston, Mayfield, D, 53, 1, J. B. Cadena sur, 330 ft from n and 187 ft from w line; C. E. Christian, 94, 3, M. McCabe sur, 859 ft from n and 253 ft from e line; C. E. Christian, A, 100, 2, R. W. Smith sur, 330 ft from s and w lines; C. E. Christian, B, 99, 2, W. R. Cook sur, 355 ft from w and 388 ft from n line. Mid-Kansas Oil & Gas Co., Shreveport, La., C. L. Graham, 134, 4, J. B. Cadena sur, 330 ft from n and w lines; L. B. Rollins, 66, 2, J. B. Cadena sur, 248 ft from n and 346 ft from w line; H. L. Griffin, 64, 1, J. Ximinez sur, 330 ft from n and w lines. Texas Co., Shreveport, La., L. J. Pinkston, 80, 3, J. B. Cadena sur, 330 ft from w and 205 ft from s line. British American Oil Prod. Co., Tulsa, Okla., Kangera, 38, 3, M. J. Pru sur, 330 ft from n and w lines. Arkansas Fuel Oil Co., Shreveport, La., J. W. Wheelis, 80, 5, R. H. Penny sur, 276 ft from w and 850 ft from s line. R. D. Gordon, Fort Worth, J. L. Maxwell, 4, 1, F. Cordova sur, 150 ft from n and w lines; Brock Hrs. 3, 1, R. W. Smith sur; M. L. Thompson, 7, 2, F. Cordova sur, se corner. East Texas Ref. Co., Dallas, D. W. O'Quinn, 17, 2, Geo. Berry sur. Magnolia Pet. Co., Dallas, J. C. Bradberry, 90, 7, R. W. Smith sur, 330 ft from s and w lines. Republic Prod. Co., Longview, B. F. Hindman, 23, 3, R. W. Smith sur, 150 ft from s and e lines. Sinclair Oil & Gas Co., Fort Worth, I. L. Kinney, 579, 18, B 34, J. B. Cadena sur, 185 ft from e and 853 ft from s line. Ward Oil Corp., Ardmore, Okla., E. S. Thrash, 200, 8, F. Cordova sur, 330 ft from w and 2137 ft from n line; J. M. Finney, 43, 3, F. Cordova sur, 150 ft from n and w lines. Ward Oil Corp., Ardmore, Okla., J. M. Finney, 43, 4, F. Cordova sur, 434 ft from n and 150 ft from w line; 5, 718 ft from n and 150 ft from w line.

REFUGIO COUNTY — G. C. Dixon, Refugio, P. M. Peck, 300, 1, S 24, Bonnie View sur, 450 ft from n and 150 ft from w li s½.

SMITH COUNTY—Dumas Pet. Co., Dallas, S. S. Cook, 5, 1, Jas. Jordan sur, 190 ft from n and 240 ft from w line. Mid-Kansas Oil & Gas Co., Shreveport, La., M. M. Cross, 165, 8, I. Procter sur, 372 ft from n and 330 ft from w line; J. H. Sharp, 482, 2, M. S. Coy sur, 372 ft from n and 1336 ft from e line. Magnolia Pet. Co., Dallas, J. R. Wright, 166, 12, J. Vargas sur, 660 ft e of No. 10; 13, 439 ft se of No. 5. C. B. Bunte, Inc., Tyler, A. S. Jarvis, 41, 1, S. Dexter sur, 330 ft from n and 287 ft from e line; 2, 330 ft from e and 330 ft from s line; 3, 330 ft from s and e lines; A. S. Jarvis, 85, 1, J. Vargas sur, 330 ft from n and e lines; 2, 330 ft from s and e lines. Arcadia Ref. Co., Tyler, J. R. Green, 65, 2, Jas. Jordan sur, 330 ft from s and w lines. Pointer Oil Co., Waco, T. O. Wright, 9, 2, J. Vargas sur, 273 ft from n and 200 ft from w line. D. A. Culbertson, Tyler, S. S. Cook, 5, 1, Jas. Jordan sur, 180 ft from n and 1175 ft from e line. Jas. Owen, Tyler, Woolford, 6, 1, Jas. Jordan sur, 300 ft from n and 203 ft from w line. Texas Co., Shreveport, La., M. Blackwell, 3, Jas. Jordan sur, 140 ft from e and 240 ft from s line; 5, 150 ft from w and 990 ft from s line. Sinclair Oil & Gas Co., Fort Worth, D. Wright, 162, 4, J. Vargas sur, 2364 ft from n and 126 ft from w line.

SAN AUGUSTINE COUNTY—T. W. Tennant, San Augustine, A. P. Davis, 411, 1, J. Beaty sur, 600 ft from s and e lines.

SHELBY COUNTY—Oil News Publishing Co., Fort Worth, Pickering, 361, 1, G. H. Patterson sur, 150 ft from w and 1000 ft from s line.

STARR COUNTY — R. B. Suttles, Rio Grande City, San Roman, 3000, 1, Por. 110 sur, 2000 ft from n and 270 ft from w li Por. 110.

UPSHUR COUNTY—D. J. O'Sullivan, San Antonio, O. F. Smith, 10, 1, T. Allen sur, 273 ft from n and 395 ft from w line. California Pet. Co., Shreveport, La., D. Culpepper, 62, 1, Wm. King sur, 240 ft from e and 100 ft from s line; A. G. Deering, 70, 3, J. M. Pineda sur, 498 ft from w and 213 ft from s line; W. H. Reed, 25, 1, M. Mann sur; A. G. Deering, 70, 4, J. M. Pineda sur, 330 ft from n and w lines; W. M. Clements, 60, 4, M. Mann sur, 330 ft from w and 408 ft from s line. Magnolia Pet. Co., Dallas, N. W. Blackwell, 90, 3, H. H. Edwards sur, 330 ft from s and e lines; J. W. Free, 169, 12, G. W. Hooper sur, 641 ft se of No. 3. Peckham Oil Co., Wichita Falls, J. W. Free, 10, 1, Wm. King sur, 338 ft from n and 330 ft from w line. Sun Oil Co., Dallas, A. J. Watkins, 54, 1, J. M. Pineda sur, 300 ft from n and 498 ft from e line. R. L. Clark, Duncan, Okla., O'Byrne, 2½, 1, B 7, J. M. Pineda sur, 139 ft from n and w lines.

VAN ZANDT COUNTY—W. M. Young, Corsicana, J. R. Oliver, 2, 1, Wm. Daniels sur, 150 ft from n and 75 ft from e line. Pure Oil Co., Fort Worth, F. Blackstone, 40, 2, J. Walling sur, 150 ft from n and w lines.

WARD COUNTY—Atlantic Oil Prod. Co., Dallas, L. H. Barrow, 80, 1, S 23, B 5, H&TC sur, nw corner.

WEBB COUNTY—O. W. Killam, Laredo, A. M. Bruni, 500, 22, S 9, M. Arispe sur, 1030 ft sw of No. 20.

YOUNG COUNTY—Geo. Mollenkopf, Olney, S. R. Jeffery, 40, 1, 50 TE&L sur, 450 ft from w and 150 ft from s line. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 29, 2246 TE&L sur, 750 ft from s and 2550 ft from e li n½. C. C. Mason, Newcastle, Jeffery, 80, 1, 46, TE&L sur, 150 ft from s and e lines. E. D. Willis et al, Jean, Balknap, 40, 7, 22 TE&L sur, 450 ft from n and 150 ft from e line. Petroleum Prod. Co., Wichita Falls, H. F. Haygood, 160, 1, 1468 TE&L sur, 1056 ft from e and 800 ft from s line. D. M. Ross, Wichita Falls, A. M. Graham, 140, 1, 276 TE&L sur, 150 ft from s and w lines. Producers Supply & Tool Co., Fort Worth, French, 60, 8, 31

TE&L sur, 300 ft n of No. 6; 9, 300 ft n of No. 8.

ZAPATA COUNTY—O. W. Killam, Laredo, R. Lopez, 40, 2, Sec. 255 sur, 150 ft from e and 380 ft from n li Blk. 4. E. Cuellar, 418, 46B, Sec. 277 sur, 350 ft nw of No. 45. Winch & Billings, Laredo, J. Bustamante, 31, 2, No. 35 B, Comitas sur, 862 ft from e and 150 ft from s line.

LOUISIANA

CAMERON PARISH—Jim Oil Co., Lake Charles, M. P. Erwin 3, 13-12s-10w, 1520 ft n and 1395 ft w of se cor of sec. R. E. Siess, Tr., Lake Charles, J. M. Vincent 3, 30-12s-10w, 2195 ft s and 1220 ft w of ne cor of sec.

EVANGELINE PARISH — J. E. Ludean, Houston, Texas, J. E. Vidrine No. 1, 47-3s-2e, 260 ft w and 350 ft s of ne cor of sec.

IBERVILLE PARISH—Standard Oil Co. of La., Shreveport, Wilberts Myrtle Grove No. 2, 52-9s-11e, 2040 ft n and 600 ft w of center of sec.

ARKANSAS

LITTLE RIVER COUNTY—H. M. Harrell, Dierk Lbr. Co. 1, 330 ft e and 150 ft s nw cor, ne ne nw, 29-12-31.

SEVIER COUNTY — Tri-State Oil & Gas Co., Gimmel 1, 300 ft w, and 300 ft s ne cor sw sw, 34-8-32.

Wildcat Reports from All Sections

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SOUTH TEXAS

ATASCOSA COUNTY—Glen Mathis' Mrs. G. M. Martin 2, Navarro sur, 3 mi s Amphion, 100 ft sw No. 1, sd 2980 ft.

BASTROP COUNTY—W. A. Allen's Birmingham 1, King and Millett sur, sd 1220 ft. Texas Dev. Co.'s C. H. Ray 1, Thos. Christian sur, 1½ mi ne Elgin, dr 1603 ft.

BEE COUNTY—Al A. Buchanan's Mary Dorenfield et al 1, John Lyford sur, in Holzmark gas district, lcn being made to dr before November 26. C. R. & M. Drlg. Co.'s Geo. Ray 1, w of Buchanan & Lefevre lease, John Williamson sur, Damac pool, lcn. J. M. Davis et al's Geo. Ray 1, e offset Buchanan & Lefevere well, Jno. Williamson sur, Damac pool, lcn. Houston Oil Co.'s J. F. Portis 2, A. Smalley sur, Damac pool, ru. J. C. Hughes et al's P. H. Martin 1, John Lyford sur, just s Holzmark pool, dr 600 ft. Humble Oil and Ref. Co.'s Laura Thompson 1, Garrett Roche sur, dr 3212 ft, sand 3164 ft, dry. Lefevere & Buchanan's Geo. A. Ray 1, elev 342 ft, Jno. A. Williamson sur, 2800 ft w Damac producer, Damac pool, sand cored 3887-3908 ft, set csg 3886 ft, plug back 11 ft, complete 500 bbls on ¾-inch choke, no water. J. S. Mauldin's Mauldin 1, G. A. Kerr sur, just s Pettus townsite, sd 3930 ft. Morgan et al's Ray 1, just s Weinert lease, Jno. Williamson sur, Damac pool, lcn. T. B. Slick Estate's Geo. A. Ray 2, G. A. Kerr sur, in Damac pool, making lcn. The Texas Co.'s L. Brammel 1, John Pace sur, nw offset Buchanan & Lefevere well, Damac pool, making lcn. United Prod. Co.'s Geo. A. Ray 39, T. Hanson sur, just ne Pettus discovery pool, dr 6984 ft. H. H. Weinert & C. R. & M. Drlg. Co.'s Geo. A. Ray 1, Jno A. Williamson sur, Damac pool, dr 3050 ft.

BEXAR COUNTY—Alamo Nat'l Gas Co.'s (Whipple et al) Gembler 1, Menchaca sur No. 51, nw Dobrowolski gas pool, broken sand abt 690-715 ft, show considerable gas, completing. J. E. Anderson's S. A. Suburban Irrigated Farms 1, C. Logan sur, near Kirk, 20 mi sw San Antonio on Chicon Lake Fault, csg set 1117 ft, top Anacacho 1117 ft, sandy lime 1137-1200 ft, show abt 100,000 cu ft gas daily, now dr 1258 ft. S. W. Blount's S. A. Land & Dev. Co. 1, 1 mi e Medina river on Palo Alto rd, 12 mi s San Antonio, sd 325 ft, move in equipment. Jno. T. Callahan's J. H. Buch 1, J. M. McCamley sur, dr 650 ft. Crawford & Terrell's L. F. Ridder 1, J. A. Baerera sur No. 58, sp in. Gatlin Oil Co.'s Beck 9, A. Montez sur, Dobrowolski pool, lcn. Ewell Neill's J. M. Watson 1, Martinez sur, 10 mi s San Antonio, dr 1165 ft. W. S. Rogers et al's L. Dunlop 1, Juan Montez sur, sd 612 ft. Schneider. Rees et al's Claussen 1, n San Antonio, SJ&A Sur No. 17, sd 863 ft. Tri-State Oil Co.'s Carruth 1, F. Bolen sur, sd 770 ft.

BLANCO COUNTY—Hardy Sitton's Standeford 1, sur 155, 3½ mi nw Blanco City, sd 1115 ft; McMillen 1, Benjamin Williams Sur. No. 125, 2 mi w Blanco City, sd 686 ft. Forest Oil Co.'s (Rosenfield et al) Hohenberger, sur No. 94, sd 712 ft. Thomas Hicks et al's Specht & Wiedner 1, Thos. M. Fowler sur, No. 27, 2 mi s Twin Sisters, dr 1665 ft.

CALDWELL COUNTY—Joe Bruner's Malone 1, A. Floyd sur, 2 lcn s Salt Flat, csg set 2396 ft, td 2572 ft, showed abt 20 bbls, shot, some increase, now swabbing. Lloyd North's (Ralph Lewis et al's) Keith McGee 1, Pinchback sur, ¾ mi sw Mills-McMahon well, spud and sd acct water, prep to redr.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

COMAL COUNTY—Caldwell & Lanier's T. J. Byler 1, 10 mi s Blanco City, HE&WT Sur No. S-894, sd 754 ft.

DUVAL COUNTY—Cole Pet. Co.'s Benavides 71, blk 8, sur 19, e of Cole field, test 200 ft oil through tester in 10 min., sand 1747-57 ft, fsh for bailer line and swab. Duval Oil Corp.'s Bishop Cattle Co. 6, Sur 135, S&O pool, set 6⅝-inch csg 2335 ft, top sand, woc. Humble O&R Co.'s White 2, sur 59, S&O pool, sand 2291-97 ft, set 6⅝ csg 2288 ft, dr in. Magnolia Pet. Co.'s Wilson 6, Sec. 136, S&O pool, set 6⅝ inch csg 2230 ft, top sand. SR&C & Vacuum Oil Co.'s Duval County Ranch Co. 5, Sur 293, SRC pool, 6⅝ inch csg set 1720 ft, sand 1723-28 ft, made small well, deepen to 1737 ft, now pump 250 bbls; Duval County Ranch Co. 6, Sur 293, SRC pool, set 45 ft surface csg. Thomas & Tarver's Bishop Land and Cattle Co.'s Welder Wood 1, 16 mi from S&O pool, sec 269, Welder-Wood ranch, sand 2152-55 ft, show several thousand ft gas, no water on dst, set csg, woc; Bishop Cattle Co. 4, sur 135, S&O pool, spud in. The Texas Co.'s Bishop Cattle Co. 3, sur 135, S&O pool, 6⅝ csg set at 2310 ft, top sand 2312 ft, total depth 2354 ft, completed 500 bbls.

FRIO COUNTY—Arthur H. Wray's Roche 1, sec 123, A. Hutzler sur, near Big Foot, 1500 sw Burns 1, dr 3206 ft.

GOLIAD COUNTY—Benedum & Trees and Plymouth Oil Co.'s Parks 1, 2900 ft se Gibson Parks 1, coring 3125 ft. Neel et al's Pettus 1, J. M. Pettus tract, Pedro Trevino sur, w Goliad, dr 765 ft.

GUADALUPE COUNTY—Harry Bruner's Jim Sherrill 2, Geo. Allen League, near Staples, sd 190 ft for rotary. Barnhill et al's Hoffman 1, between Seguin and Darst Creek, dr 1645 ft. R. S. Bolling's L. B. Linne 1-B, se cor tract in V. Gotari sur, 8 mi sw Seguin, top Edwards 1828 ft, td 1887 ft, dry and abnd. John F. Camp's Dan Denman 1, Wm. Arrington sur, 2500 ft s Camp well, top chalk 2256 ft, hit crevice 2400 ft, set 6⅝ inch csg, official gauge 1380 bbls, worked over, make abt 2500 bbls through tubing. W. M. Eiser et al's Wells 1, ne quarter Jose de la Baume sur, ru and sd. Humble Oil and Refining Co.'s Dan Denman 2-C, William Arrington sur, Camp pool, set 60 ft surface csg, woc. C. McGarity et al's August Wesch 1, H. M. Thompson sur, No. 89, 2 mi n Marion, sd 1200 ft. Pray & Chamberlain's Krueger 1, near Guadalupe river, H. Branch sur, set 150 ft 8-inch csg, now dr 420 ft. Schleter Asherton & Armstrong's Ogletree 1, Robt. Smith sur, 1 mi n old Luling field, sd 1745 ft. J. M. Scott's E. Drumm 1, C. Campbell sur, near Staples, dr 300 ft.

HAYS COUNTY—J. C. Jones et al's Byler 1, John Ingram sur, 15 mi nw San Marcos, sd 925 ft.

HIDALGO COUNTY—E. J. Barrett & P. Kanellos' J. D. Brook 1, 15 mi nw Mission, lcn, to dr to 4500 ft. Dayle L. Smith Oil Co.'s Fernandez 5, Porcion 75, 21 mi w McAllen, casing set 3982 ft, salt water sand 3992 ft, gas sand 4010-26 ft, ran open several days, showing plenty salt water and gas, to attempt to cut off salt water and complete.

JIM HOGG COUNTY—O. W. Killam's R. Lopez 2, Blk 4, Henne, Winch & Farriss pool, dr 1309 ft.

JIM WELLS COUNTY—Larcro G. & Pet. Co.'s Wade 2, 800 ft s No. 1 Larcro gas field, set 6⅝ inch csg 2921 ft, td 2931 ft, completed, 1200 pressure, 50,000,000 cu ft gas. Stanolind O&G Co.'s N. A. Hoffman 1, La Trinidad sur, 4½ mi sw Ben Bolt, dr 5490 ft in shale.

KARNES COUNTY—V. F. Neuhaus's L. L. Russell 1, C. Martinez sur just n Kennedy-Runge Highway, sd 1804 ft for fuel. Jones et al's (J. Morrisey) Cochran 1, D. B. McConnel sur, w Kennedy, sd 1012 ft. United North & South Dev. Co.'s Morrell 1, Carlos Martinez sur, 7 mi sw Kenedy, abnd 2787 ft.

KENDALL COUNTY—Borgett et al's W. Hagg 1, w Avery sur, sd 1250 ft. F. S. Dibble's Ellebracht 1, TW&NG sur No. 77, 12 mi n Sisterdale, sd 50 ft. Dixon Oil Co.'s Behr 1, Jessie Wilson sur, 3 mi s Sisterdale, sd 2715 ft. R. M. Perkins' (W. H. Sartain) Lawhorn 1, 30 ft sw original test, D. L. Richardson sur, sw Kendalia, no rept. Hardy Sitton's W. B. Garvin 1, D. L. Richardson sur, 1 mi ne Kendalia, sd 1480 ft.

KERR COUNTY—Evans and Gant's Seiker and Mears 1, CCSD&RGNR Ry. sur, sec 1605, 2 mi ne discovery, sd 4031 ft, sandy shale. Jeff Love 1, J. Martinez sur No. 1594, sd 4060 ft, brown lime. Evans and Sprinkle's Jeff Love 2, sec 1592, ½ se discovery, dr 3958 ft. Chester A. Martin's J. E. Young 1, A. E. Bruce sur, ne discovery, 1310 ft, move on 12½ inch csg.

KLEBERG COUNTY — H. Carter's R. H. Simmons 1, sec 7, King sur No. 3, dr around 900 ft.

LA SALLE COUNTY—Buckley Ranch O&G Co.'s Buckley et al 1, sur 37, Buckley-Walling ranch, cored 4501-4 ft, probably Navarro, to dr to 7000 ft. Salt Lake City Oil Co.'s J. F. Mayes 1, sec 19, blk 20, I&GN sur, sd 1100 ft.

LIVE OAK COUNTY—Henderson Coquat et al's H. Hewitt 1, Thomas Adams sur, sec 4, sd 445 ft. Phillips Pet. Co.'s Sanger 1, Thomas Welch sur, near County line, dr 900 ft in gumbo. V. G. Schimmel's (Texas Pet. Co.) C. L. Terrell 1, s Fant City, D. O. Boyle sur, sd 900 ft, acct lack wter.

MAVERICK COUNTY—I. N. Boicourt's Bandera School Land 2, sd 2284 ft. Texas Gas Utilities Co.'s Chittim 8, sec 129, blk 7, I&GN sur, Chittim field, dr 4876 ft.

McMULLEN COUNTY—A. E. Adams' Martin 1, L. E. Melon sur, 15 mi sw Tilden, sd 363 ft. Brodie, Shearer and Emerich's Shiner 1, Henry Brewer sur, 12 mi se Tilden, sd 2006 ft. Jacob, Buzzini & Pickett's Jacob 1, Southern gas district, W. H. Jacob sur No. 8, near Live Oak line, spud in.

MEDINA COUNTY — Frank A. Brown's Jacob Fohn 1, J. F. Tony sur, 8 mi s Hondo, fsh 922 ft. C. J. Webster O&G Co.'s (Na-

tional) Adams 1, Hillemeyer sur, No. 25, near Devine, ru.

NUECES COUNTY—Gulf Coast Oil Co.'s Sagarin 1, sec 1V9, Kinney sur, Saxet field, sand 4638 ft, showed oily mud with 500 lbs pressure on dst; Elder 1, nw Harrel 1, Saxet field, sand 4892-97 ft, made sw. Neal-Milton & Kepley Prod. Co.'s Roark 1, 2000 ft nw Saxet Dunn 8, Saxet field, sand 4825-32 ft, show 55 fourbles pure oil on dst, made sw when dr in, set whipstock 4832 ft, sidetracked and coring sand 4844 ft. Saxet Oil Co.'s Weil 5, Saxet field, spud in. Stanolind O&G Co.'s (Southern Crude Oil Purchasing Co.) Chas. E. Stratton 1, sec 12, Stratton sub, P. Anchow sur, 6 mi s Agua Dulce, sd for orders, td 4765 ft. L. L. Smith's Alexander 1, Saxet field, abn 5357 ft.

REAL COUNTY — Evans and Sprinkle's Haby 1, AB&M sur, 7 mi sw Love 1, sec 175, set 8¼-in cas 2560 ft, now sd.

REFUGIO COUNTY — Blanco Creek Oil Corp.'s Damman 1, blk 16, Bonnie View Ranch sub, 8 mi s and e Refugio field, sd 4685 ft. Humble O&R Co.'s M. V. O'Conner 1, John Keathing sur, near Victoria line, set 9⅝-in cas 3879 ft, woc. Larcro Gas & Pet Co.'s Strauch 4, blk 21, Refugio, setting 300 ft surface cas. Moody-Seagraves Prod. Co.'s Strauch 1, Refugio, blk 9, to work over; St. John 2-A, Refugio sur, dr 3642 ft. United Prod. Corp.'s O'Brien 6, Refugio, sd 6450 ft; W. J. Cox 2-A Hews and L. Brown sur, Refugio, dr 5635 ft.

SAN PATRICIO COUNTY — Atlantic Oil Prod Co.'s Welder 1C, on Welder ranch, blk C, about 10,000 ft sw Aransas gasser, dr 1000 ft. Welder Oil Corp.'s Welder 3, 900 ft ne No. 2, Welder gas field, sand 3647-59 ft, and sand 3659-61 ft, both show gas, sd. Saxet Oil Co.'s Rachal 18, White Point, J. N. Seguin sur, dr 1762 ft.

STARR COUNTY—Hooks & Weaver's Kelsey Bass 3, blk 2, sur 6, sub of Porcion 75-76-77, Jurisdiction of Camargo, Olmos pool, dr 200 ft. Los Olmos O&G Co.'s Kelsey Bass 6, blk 5, sur 5, Olmos pool, sand 348-63, set 6⅝-in cas 345 ft, wait on cement; Seabury 1, Porcion 75, Olmos district, sand 329-333 ft, show oil and sw, abn 390 ft. San Marcos Dr. Co.'s (Lon Smith) Ivey 1 (Kelsey Bass), sur 8, sub of Porcion 75-76-77, show oil and sw at 200-18 ft, abn 515 ft; Ivey 2, 800 ft s No. 1, sand 200-4 ft, testing through tester.

TRAVIS COUNTY—Fritz Fuchs' A. F. Smith 1, Kimbor sur, lcn. C. R. Franklin's J. Wilson 1, A. Alexander sur, dr 950 ft. Henze & Ray's J. M. Hatch 1, center S. Hamilton sur, sd 375 ft. Speed, Bass & Fuch's R. A. Chadwick 1, A. C. Caldwell sur, dk; Nagel 1, L. Kimbro sur, abn 900 ft.

VICTORIA COUNTY—C. R. & M. Dr. Co. & C. B. Bunte, Inc.'s C. R. Keenan 1, center 2500-acre ranch, M. Leon sur, dr 2485 ft. Houston Oil Co.'s Konrad 1, T&NO sur, on Beck Salt Dome, N. Victoria, wash to bottom, td 5176 ft. The Texas Co.'s McFadden 3, John M. Rine sur, nw No. 2, coring 4855 ft.

WILLIAMSON COUNTY — Burns et al's Wilder 1, H. Owens sur, sp in. H. Fritz et al's Fee 2, HT&B Sy sur, 3 mi sw Taylor, 35 ft n No. 1, sd 1115 ft. Hays and Gee's E. G. Johnson 1, B. C. Low sur, s Georgetown, fsh 1561 ft. McLean et al's Miller 1, Manlove sur, sd 1670 ft. Nowsman et al's Cruze 1, Eubanks sur, abn 1612 ft. R. S. Wilson's J. S. Speckles 1, J. Jordan sur, 1 mi n Coupland, sd 890 ft.

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CASS COUNTY—		
United North & South Dev. Co., A. Nickleberry 1	*	4154
RUSK COUNTY—		
Albert W. Jones Oil Co., W. Menefee 1	†~	2758
UPSHUR COUNTY—		
Daisy O&G Co., B. F. Phillips 1..	*	3730
Sorrels & Duffy, J. W. Wooden 1	*	3722

EAST TEXAS

SHELBY COUNTY—		
J. E. Stock et al, Pickering Lbr. Co. 1, Jonas Harrison sur.....	*	780

HARRISON COUNTY — Ryan Cons. Pet. Corp.'s J. M. Furrh 1, T. J. Copelain sur, rig. J. M. Gholson's Bivins 1, T. D. Peterson sur, sd 3085 ft. Lloyd Oil Corp.'s Timmons 1, Jno. Findley sur, 10-inch 240 ft, sd for fuel 3432 ft bro lime.

MARION COUNTY—Rondeau & Hindman's Lindsay 1, Alex Albright sur, sd 2450 ft. J. W. Hamilton's Wood 1, Alex Albright sur, sd 2380 ft. Claunch et al's Laun 1, Henry Fulgram sur, sd 300 ft. Sheldon et al's Brown 1, F. B. Fowler sur, sd 3750 ft.

PANOLA COUNTY—Dillon & Bradham's Baldwin 1, Hampton West sur, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Werner 11, D. B. Lewis sur, 15½ cas 383 ft, 9-inch 3525 ft, top Washita 2190 ft, top anhydrites 4150 ft, base 4625 ft, coring 4688 ft. Daisy O&G Co.'s Rucks Heirs 1, Jno. Palmer sur, sd for water, 3264 ft, shale. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, sd 650 ft. Hoffer et al's Cameron 1, W. A. Lagrone sur, dk. Davidson et al's Latham 1, Wm. Rich sur, 10-inch 260 ft, sd 1548 ft shale. Nelson et al's Williams 1, Jas. Hanks sur, 12½ cas 400 ft, sd 2250 ft lime. Stamps et al's Chadwick 1, Wm. Scantleberry sur, rig.

SHELBY COUNTY—E. L. Chapman's Holt 2, Matthew Moore sur, move in heavier rig, td 3127 ft. Pickering Lbr. Co. 1, C. F. Henry sur, blew out est 25 mil ft gas 5 3/16 cas 3102 ft, td 3864 ft. McRobie et al's Windham 1, Wm. Leach sur, 296-ac tract, 12½ cas 276 ft, top chalk 1930 ft, 8¼ cas 1750 ft, bailed dry small show gas at 2282 ft, chalk, base chalk 2572 ft, cored sand showing oil 2686-92 ft, bailed down 2000 ft, showed small amt gas, bailing to test, td 2704 ft sandy shale. Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, top PG 2900 ft, sd 3246 ft (corrected depth). H. H. Gracey's J. A. Morrison 1, Wm. English sur, sd 2600 ft. C. H. Tautenhahn's J. C. Bogard 1, Thos. Baker sur, partly rigged up, sd 20 ft. Ridgeway et al's Polley 1, Domingo Gonzales sur, 10-inch 112 ft, trying kill fresh water flow, td 822 ft. K. H. Francis' Jno. Mims 1, Mary Smith sur, 15⅜ cas 40 ft, 10-inch 393 ft, top Midway 847 ft, sdtr ds at 2000 ft, sd 2750 ft, old td 2805 ft. United North & South Prod. Co.'s Windham 1, A. H. English sur, 171.5 ac tract, 12½ cas 376 ft, top chalk 2004 ft, base chalk 2602 ft, coring 2682 ft sandy shale. J. E. Stock's Pickering Lbr. Co. 1, Jonas Harrison sur, dry abn, td 780 ft. Harry Elliott's Pickering 1, 361 ac tract, C. H. Patterson sur, rig.

KANSAS

(Wells whose status has not changed since October 31st are omitted.)

SUMNER COUNTY—Spencer et al, Porter 1, ne sw, 12-23-4w, 6-inch 3718 ft, sd 4080 ft.

FINNEY COUNTY — National Ref. Co., Wells 1, sw c 13-23-30w, dr 1680 ft.

HARVEY COUNTY — J. P. Flannigan, Sheridan 1, c sw, 32-22-1e, sil. 1. 3606 ft, dr 3870 ft.

BARTON COUNTY—McCool et al, Isern 1, c sw se ne, 12-20-11w, td 3321 ft, swab 15 bbls per hr. Syndicate Oil, Boertz 1, c nw se ne, 13-18-12w, 6-inch 2605 ft, dr 3070 ft.

MORRIS COUNTY—Urschel et al, Bersuch 1, c nw se nw, 10-17-7e, td 915 ft, fsh bit.

RUSSELL COUNTY — Austin Drlg. Co., Rockefeller 1, se c 6-13-12w, sd 3506 ft. Twin Mounds Oil, Weis 1, c w½ ne nw, 30-13-4w (owd) td 2710 ft, dr by 8-inch.

LOUISIANA GULF COAST

ACADIA PARISH—Yount-Lee Oil Co.'s H. Latrielle 10, Evangeline district, having trouble with cemt job at 7740 ft.

ASCENSION PARISH — Gulf Ref. Co.'s United Lands Co. 20, 15-10s-4e, dr sh 972 ft. McElroy Oil Co.'s Lacy 2, 20-10s-4e, temp abn 4070 ft.

CAMERON PARISH—Calcasieu Oil Co.'s Watkins 28, E. Hackberry, td 3185 ft, 4¼-in cas set at 3175 ft. Jim Oil Co.'s Erwin 3, E. Hackberry, 13-12s-10w, bldg dk. Pure Oil Co.'s Yount Lee 5, Sweet Lake dist, drlg 4218 ft, sdtrkd old hole at 3030 ft. The Texas Co.'s State Calcasieu Lake 7, Calcasieu Lake dist, lcn, 1-14s-9w. Yount-Lee Oil Co.'s State Kelso Bayou 46, E. Hackberry dist, 13-12s-10w, dr 1913 ft, set 10-in cas 370 ft. R. E. Seiss, Trustee's J. M. Vincent 2, Old Hackberry, sd in rk, 2160 ft.

IBERVILLE PARISH—Standard Oil Co. of La.'s Myrtle Grove-Wilbert 1, Bayou Choctaw dist, flowing by heads from 2530 ft, prep to put on pump; Myrtle Grove-Wilbert 2, 52-9s-11e, dredging canal; Gay 2, lcn and dk 600 ft e of sw c se¼ 52-9s-11e; Schwing 5, Bayou Blue dist, 84-9s-10e, temp abn at 2988 ft, o.s from 2968 ft showing salt water; Schwing 6, trying to core in rk at 5740 ft.

LA FOURCHE PARISH—State Prod. Co.'s Dibert-Stark-Brown C, Chacahoula dome dist, 71-15s-15e, prep to set cas. The Texas Co.'s Leesville 3, Leesville dist, 26-21s-22e, ru.

PLAQUEMINE PARISH—Humble Oil & Ref. Co.'s Cockrell Moran 6, 20s-26e, set 9⅝-in cas at 1270 ft, prep to dr plug.

POINTE COUPE PARISH—Grand Bay Oil Co.'s J. H. Moinott 1, 93-5s-11e, prep to sp.

TERREBONNE PARISH—Louisiana Gas & Fuel Co.'s Minor Estate 2, Houma dist, 3-18s-16e, dr 3253 ft. The Texas Co.'s State Bay Junop 2, Bay Junop dist, td 3050 ft, rep engine; Lake Barre 11, dr in sh 2880 ft; L. L. E. Lake Barre 1, 30-21s-20e, dr and foundation; State Lake Pelto 5, Lake Pelto dist, 8-23s-18e, driving piling.

VERMILION PARISH — Pure Oil Co.'s West Lake Land Co. 2S, 4-12s-1w, dr 6842 ft.

NORTH LOUISIANA

BIENVILLE PARISH — Arcadia Drilling Co.'s Mason 1, ne sw 28-18-6w, sp 12½ cas 39 ft, dr 1370 ft shale.

BOSSIER PARISH—Andrews & Davlin's Nattin 1, 15-22-14, 4½ cas 2882 ft, sd wo 2890 ft. Dr. Hankins et al's Newell 1, 12-19-11, sd 1255 ft. D. L. Perkins et al's Ardis 1, 13-15-11, top Nacatosh 944 ft, sd 1004 ft.

CADDO PARISH—United Gas Pub. Serv. Co.'s H. J. Bussa 1, 33-22-16, 12½ cas 375 ft, 9⅝ cas 3625 ft, dr 4675 ft lime (5500 ft test). Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta 3648 ft, red shale and lime.

CALDWELL PARISH—Monroe Pet. Corp.'s Burton 1, 36-12-2e, sd acct titles 2986 ft. Carter Bell et al's Taylor 1, 17-14-4e, 12½ cas 110 ft, sd.

DE SOTO PARISH—Rellit O&G Co.'s Cannon Hrs. 1, 12-11-16, top chalk 1475 ft, base 1810 ft, 6-inch cas set with pckr at 1470 ft, dry wo, td 1965 ft. Keatchie O&G Co.'s Smith 1, 31-14-15, sd 2350 ft. E. T. Oakes' Johnson 1, 30-13-15, base chalk 2160 ft, top another chalk 2815 ft, dr hd lime 3017 ft. Walters & Nicholson's Jim Guy 1, 3-11-13, sd 1260 ft.

LA SALLE PARISH—Gulf Ref. Co.'s Tremont Lbr. Co. 1, ne sw 10-9-2e, 15½ cas 105 ft, 12½ cas 940 ft, dr shale and bldrs 4545 ft.

NATCHITOCHES PARISH — Mid-West Prod. Co., Inc.'s, Brown 1, 31-11-10, rig. C. M. Talley et al's Talley 1, 29-11-10, sd 1380 ft. J. W. Cooper et al's Cooper 2-A, 35-11-10, sd 1515 ft. Gerson et al's Smith Island 1, 1-10-8w, sp and sd. R. A. Keater's Stephens 1, 25-10-8w, dk.

OUACHITA PARISH—S. C. Wilson et al's W. L. Williams 1, sw se 5-16-1e, dk.

RED RIVER PARISH — Mack Jourdan Co.'s Lockett 1, 33-13-10, sd 2550 ft.

RICHLAND PARISH—National Gas Co.'s Singletary 1, 20-18-7e, sd 2515 ft.

SABINE PARISH—J. J. Kean's Belton 1, nw se ne 31-9-13, elev 233 ft, 8-inch cas 1590 ft at top chalk, claim 300 ft oil in hole, wo, td 2039 ft chalk. H. W. Perritt's Bowman-Hicks 6, se ne 2-7-12, rig. A. H. Thames' Edwards Est. 1, 8-8-13, sd 1200 ft. R. L. Gay, Tr.'s, Long Bell A-1, nw nw 10-8-13, coring 3760 ft (corrected depth). Coates Pet. Co.'s Bowman-Hicks A-1, sw se 18-7-13, 6-inch cas 2160 ft, dr 2630 ft; Bowman-Hicks 1, ne sw 2-7-12, oil show in Wilcox 1670 ft, top marl 2230 ft, top chalk 2300 ft, wosr, td 2441 ft; Stille 1, nw se 35-8-13, lcn; Hill 1, se se 35-8-13, lcn. Dengail Oil Co.'s Nulton 3, se sw ne 1-7-13, 10-inch 103 ft, dr 1450 ft; Nulton D-2, nw ne 1-7-13, lcn. Ohio Oil Co.'s Bowman-Hicks 9, 35-8-12, lcn; Bowman-Hicks 10, 35-8-12, lcn; Bowman-Hicks 11, 2-7-12, lcn; Bowman-Hicks 12, ne ne 2-7-12, 10-inch 221 ft, cemtd 6⅝ cas 2208 ft. Diffie & Barrett's Lites 1, 34-8-11, 10-inch 105 ft sd. Hudson & Bird's Walden 1, sw ne 26-8-11, 10-inch 100 ft, sd for water 1800 ft. Gehrig Co.'s W. F. Skinner 1, nw nw 16-8-11, 10-inch 105 ft, sd for water. Hawkins & Anton's Newton 1, 1-7-11, wosr 2610 ft. L. K. McGuffin's Byrd 1, 1-7-11, sd 400 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd 1606 ft. Ben Merritt, Tr.'s, Byrd 2, 1-7-11, 10-inch 88 ft, sd. Roy Baker's Sabine 1, 11-7-12, wosr 2548 ft. Gautier et al's Meshell 1,

30-8-12, wosr 2530 ft. Loring Oil Co.'s Bowman-Hicks 18, sw nw 15-7-12, 15½ cas 100 ft, tested dry 4017 ft, dr 4079 ft lime and shale. G. M. LeGrand's Peterson 1, sw ne 34-7-13, 10-inch 40 ft, claims 3 ft sand showing oil 2137-40 ft, arr set 6-inch cas. A. F. Tarver's Cutrer 1, 14-7-11, wosr 2550 ft. Lyons & Neely's Byrd 3, 1-7-11, 10-inch 100 ft, sd 400 ft. Eddie Self's Jacobs 2, sw se 1-7-11, 10-inch 100 ft, dr 1910 ft. Stovall Drilling Co.'s Nulton 2, 1-7-13, 10-inch 100 ft, 6-inch 2059 ft, dr 2190 ft. O. J. Baird's Duggan 1, se nw se 14-7-11, 10-inch 100 ft, dr 700 ft. Davidson & Grigsby's Martinez 1, nw se 2-7-13, dk. M. J. Kissick's Brown Lbr. Co. 1, nw ne 1-7-11, 10-inch 100 ft, sd for water 620 ft. Exchange Pet. Co.'s La. Long Leaf 1, ne nw 35-8-11, dk.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12e, sd 3545 ft. L. A. Duvall et al's Martin Jacoby 1, ne ne 1-14-10e, sd 3060 ft gumbo. Stovall Drilling Co.'s Miller 1, ne sw 18-10-10e, lcn.

MISSISSIPPI

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Long Bell Lbr. Co. A-1, sw sw 10-2n-16e, elev 380.3 ft, 15½ cas 105 ft, 10-inch 956 ft, top black shale 2290 ft, top chalk 2633 ft, 7-inch O.D. cas 3685 ft, top Eutaw 3673 ft, 8-ft sand core in Eutaw 3692-3700 ft showed saturation heavy oil, bailed at 3700 ft, showed heavy oil and sw, sand heaved, co to bot, took 7-ft sandy shale core to 3707 ft, bailed dry, 30 ft oil, 50 ft sw and 50 ft sand rose in hole in hour, arr co and core again, td 3707 ft.

CHIKASAW COUNTY—Hightower & Golson's Fleming 1, 20-13n-3e, sd 1640 ft.

HUMPHREYS COUNTY—Danciger O&R Co.'s Bellgrade Lbr. Co. 1, nw nw 29-14n-4w, 10-inch 659 ft, dr 2650 ft, black shale.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet., Inc.'s, J. H. Keyes 1, nw ne 21-2n-10e, sd 2360 ft Wilcox.

LAMAR COUNTY (Purvis Dist.)—Stauffer & Kouri, Tr.'s, Bond 1, se ne 18-2n-14w, dk.

LOWNDES COUNTY — Lowndes County O&G Co.'s Carr Est, 1, 34-17-16e, dk.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta 3007 ft, brown sand. P. J. McAlpine's Cowart 1, 2-12s-19w, 5 3/16 cas 3420 ft, dr 3759 ft gray lime. Associates Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NEWTON COUNTY (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, 10-in 295 ft, sd 847 ft.

NOXUBEE COUNTY (Macon Dist.)—Thompson O&G Synd.'s Donahue 1, se ne 25-16n-17e, elev 280 ft, 12½ cas 20 ft, 8¼ cas 1605 ft, tested hole full alkali water 130 ft open hole, sd wo, td 1735 ft; Ames 1, nw nw 24-16-18e, dk. pat.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Hanna A-1, nw se 23-5n-1e, 9-inch 2565 ft, dr 2920 ft, chalk rock. Atkisson & Dyer's Valentour 1, 18-5-2e, 12½ cas 60 ft, sd 1422 ft. United Gas Pub. Serv. Co.'s McLaurin A-1, ne sw 8-5-2e, elev 284 ft, 12½ cas 105 ft, 9-inch 854 ft, top Wilcox 1219 ft, top chalk 2513 ft, base chalk and to per beds 2937 ft, dr 3000 ft sandy lime. Majestic O&G Co.'s Elton Lbr. Co. 1, 10-4n-3e, dk.

SCOTT COUNTY—Culley et al, Owen 1, 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18-2e, sd 2607 ft. United Gas Pub. Serv. Co.'s Tchula Store 1, sw se 33-15n-3e, elev 83.8 ft, 15½ cas 184 ft, 10-inch 855 ft, top Claiborne 725 ft, mixing mud, td 3091 ft sand.

WEBSTER OUNTY—P. J. McAlpine's Henley 1, se nw, 15-21-11e, cored gravel, sd 1800 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13-14e, sd repair rig, td 4080 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, did not change to rotary, arr resr with cable tools, td 925 ft, Wilcox; Hobson 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

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TENNESSEE

CHESTER COUNTY—Gilmore et al's Scott 1, sp 15½-inch hole with cable tools.

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, sd 2511 ft (2500 ft contract depth).

ARKANSAS

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, 4-20-8e, sd 1260 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd after testing sw 3515 ft.

CLEVELAND COUNTY—Crum & Stilwell's Bell 1, 10-10s-12w, rigged up and sd.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 8¼ cas 800 ft, tested fresh water, slight show oil, 3 ft sand, sd 814 ft.

CRAWFORD COUNTY — Ozark Na. Gas Co.'s Hammonds 1, se se 29-10-29, dr 1675 ft shale.

DALLAS COUNTY—Zepp O&G Co.'s W. E. Hillman 2, se ne 20-10-13, 10-in 135 ft 6-in 2620 ft ta 2688 ft black shale. W. E. Hillman 3, nw ne 20-10-13, lcn. Jno. James, Tr's Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft. E. C. Brewer, Tr's Hillman 1, 20-10-13, sd 2869 ft white sand.

HOT SPRINGS COUNTY—Starr Oil Co.'s Cunningham 1, 11-5-16, 12½ cas 62 ft shale and bldrs.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LINCOLN COUNTY — L. B. Cook, Tr.'s McGehee Pltg Co. 1, 5-8s-7w, sd 2800 ft.

LITTLE RIVER COUNTY—Geo. Stephens et al's Dierke Lbr. Co. 1, ne nw 29-12s-31w, dk. Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26 sd 3610 ft.

MILLER COUNTY—W. E. Noel et al's Dickson 1, 11-20-27, sd 1955 ft shale and gumbo. Fitzwater et al's E. L. Beck 1, sw se 33-15-26, 10-in 85 ft sd 2220 ft.

OUACHITA COUNTY—W. H. Copenhaver et al's Berg 1, se se 13-15-17, 10-in 42 ft sd 532 ft gumbo.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. Kentucky-Ark O&G Co. Inc.'s East 1, 13-9-23, 10-inch 288 ft hole full fresh water, wo td 709 ft.

PRAIRIE COUNTY — Powell Creek O&G Co.'s Kloss 1, ne sw 3-4n-6w, partly rigged up and sd.

SCOTT COUNTY — Heavener O&G So.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd 1860 ft, (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd 1536 ft.

SEVIER COUNTY — Tri-State O&G Co.'s Bank of DeQueen 1, 34-8s-32w, rig up.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O.R. Co. et al's Guy P. Hayes A-9, ne ne 4-16-15, elev 96 ft pulled ds hung at 6071 ft up three fourbles after lub with oil, cored rock salt 6071-85 ft cored solid rock salt 6085-6104 ft, td 6104 ft (6000 ft test). Drillers Oil & Dev. Co.'s Pickering 1, 1-17-16, cored 6 ft cap rock and oil sand 2128-34 ft 6⅝ cas 2128 ft drilled plug missed core going in for 5 ft core, will set 1 joint 4½ in liner and bail to test. Joe Modisette et al's Webb 1, nw se 6-18-13, 10-in 137 ft tested 1 mil ft gas thru ds 2503-32 ft co and will test again, td 2532 ft.

WASHINGTON COUNTY — Lincoln Lease Holding Synd's Townsite 1, 3-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 2-16-32, ta 650 ft. Delbert Graves' Cunningham 1, 14-15-32, sd 602 ft gray sand.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd 5710 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c se, hfw 2070-2170 ft, sd 3693 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Collmer 2, ne c se ne sw, sd 5640 ft, tools in hole.

ALFALFA COUNTY—T 24n, R 11w, Sec.

14, J. V. Bailey et al, Acre 1, c sw ne, sd 5502 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, sd 5850 ft, fsh job.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, td 5120 ft, to abandon.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 20n, R 5e, Sec. 6, W. A. Rookstool, Berry 1, nw c ne sw, show gas 1942-1951 ft, sd.

LINCOLN COUNTY—T 17n, R 5e, Sec. 36, W. M. Mote et al, School land 1, nw c, dr 630 ft. T 14n, R 3e, Sec. 2, Hilton Phillips et al, Phillips 1, sw c nw, dr 3242 ft.

CREEK COUNTY—T 14n, R 7e, Sec. 18, Cal Cul Oil Co., Holleyman 1, se c ne se, spd & sd.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al, Shepperd 1, se nw sw, sd 3690 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, dr 5803 ft. T 7n, R 14e, Sec. 34, Tape Oil, Fulton 1, se c, sd 1200 ft.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al, Weaver 1, c nw se, sd 1542 ft.

ATOKA COUNTY—T 1n, R 13e, Sec. 31, T. J. Campbell et al, Baird 1, nw ne sw, machine. T 1n, R 15e, Sec. 6, Edgerton et al, Rolland 2, sw ne sw, machine.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, Trustee, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, sd 5150 ft. T 11n, R 26w, Sec. 4, J. J. Rook and Palmer, Davis 1, c nw ne (owd), sd 3240 ft.

CANADIAN COUNTY—T 10n, R 6e, Sec. 1, J. V. Bailey et al, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Cooper & Terhune, Blocker 1, nw c, dr 2551 ft. T 8n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1106 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffel 1, sw c, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French et al, Murphy 1, sw nw se, sd 1654 ft.

COMANCHE COUNTY—T 4n, R 12w, Sec. 33, Snodgrass et al, Willetts 1, ne c nw, sd 240 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee, Phillips 1, ne c sw, sd 4800 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 6, Capital P&R, Cutchall 1, se c ne, sd 2432 ft.

COAL COUNTY—T 1n, R 8e, Sec. 35, W. E. McCraw, Stiring 1, ne c se, sd 1846 ft.

COAL COUNTY—T 1s, R 8e, Sec. 2, Rabiel Oil Co., Richardson 1, ne c nw, sd 1165 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Quinn 1, nw c, sd 1540 ft.

LOVE COUNTY—T 6s, R 2e, Sec. 27, Batson et al, Cross 1, ne nw ne, sd 1632 ft.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne se sw, sd 660 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
KERN COUNTY—		
Mohawk Oil Co.'s Wharton 1, 32-30-29	*	6150

ANTELOPE PLAINS—Meridian Oil Co.'s No. 1, 11-9-15, dr granite 3919 ft.

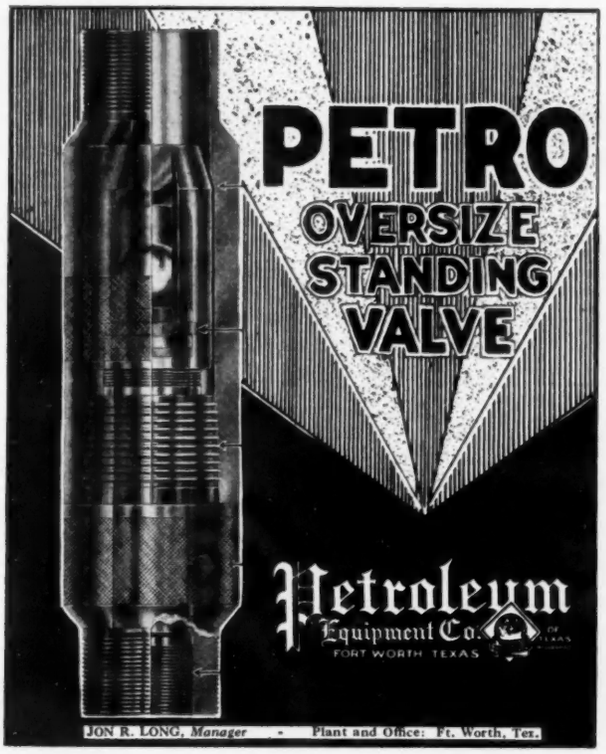
BLACKWELL'S CORNER—Signal Oil and Gas Co.'s Lincoln 1, 15-26-19, sd 100 ft.

BUTTONWILLOW — Graham-Loftus Oil Co.'s Carmel 1, 20-27-22, dr shale 4065 ft. Milham Exploration Co.'s Crites 1, 8-28-23, plugged to 3400 ft, td 3527 ft, will perforate 9⅝-inch cas and test above plug.

DEVIL'S DEN—Cumberland Oil Co.'s Cumberland 2, 17-26-18, sd 2850 ft.

LOST HILLS—General Pet.'s No. 1301, 13-26-20, sd 4399 ft. Lincoln Pet. Co.'s Theta 1A, 12-26-20, will continuue production test, td 5328 ft.

McKITTRICK — California Oil Producers' No. 2, 30-30-22, sd 6660 ft.



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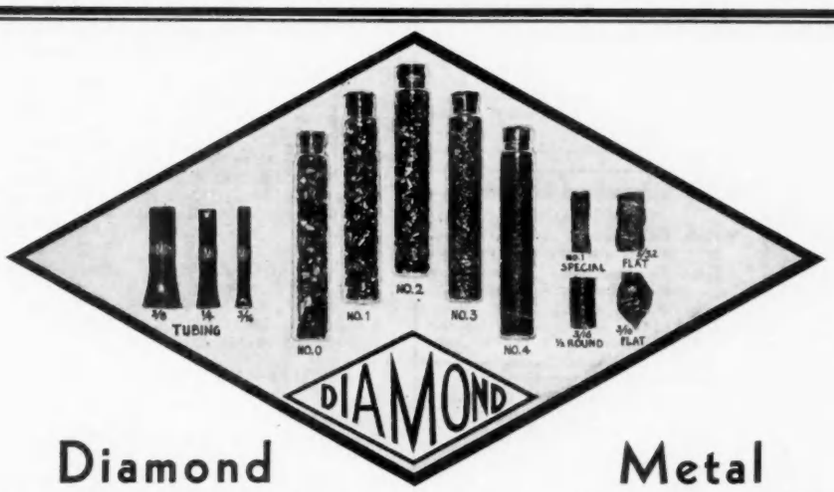

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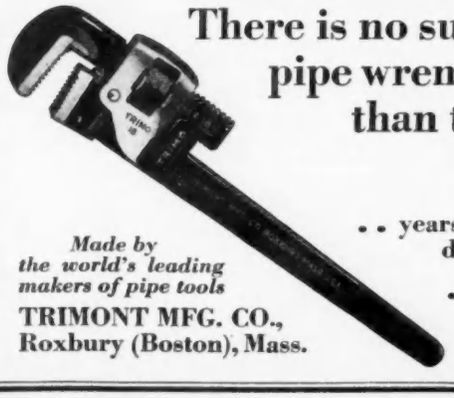

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SEMITROPIC — Fullerton Oil Co.'s Core Hole A, 25-27-23, dr shale 315 ft.

WEED PATCH—Osborn and Duff's Duff 2, 15-30-29, will deepen to 2000 ft from 1952 ft and make another production test.

SANTA BARBARA COUNTY—

GOLETA—General Pet.'s More 3, 22-4-28, swabbed water, td 6912 ft. Ohio's Oakley 1, 16-4-28, failed on swabbing test, will deepen from 5023 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 7935 ft.

VENTURA COUNTY

HOPPER CANYON — Bardeen Pet. Co.'s Lankershim 1B, 13-4-19, on pumping test, may deepen from 1799 ft.

OXNARD — Magu Synd.'s Utt 1, 17-1-21, deepening from 5222 ft.

RINCON — Continental's Grubb 1, 23-3-24, liner recovered from 6640 ft, will test again, 9⅝-inch cas re-cmt 6472 ft. Chanslor-Canfield Midway Oil Co.'s Habson A2, 23-3-24, producing 150 bbls on compressor, td 10,030 ft, plugged to 7825 ft.

SANTA PAULA—San Pedro-Pt. Fermin's Kellerman 1, 13-4-21, dr hard sand 3600 ft, carrying 4¾-inch cas.

SOUTH MOUNTAIN—H. H. Bell's Lemon 1, 22-3-21, dr gray sand 1085 ft.

MISCELLANEOUS

FRESNO COUNTY — Kingsburg Exploration Co.'s Muller 1, 30-16-23, rigging rotary.

KINGS COUNTY—Knudsen and Schmidt's Avenal 1, 36-23-17, sd 4304 ft. Irma Investment Co.'s Watson 1, 7-23-20, rig. Kettleman-Lakeview Oil and Gas Co.'s No. 1A, 20-23-20, may deepen from 1170 ft, heavy gas showing. Lacan Natural Gas Co.'s No. 1, 32-22-20, rigging rotary. Valley Exploration Co.'s Dudley 1 12-23-19, co 1287 ft; Veco 7-12, 8¼-inch cas cmt 1100 ft, td 1141 ft; Veco 5-18, 18-23-20, lcn.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, fsh for drill pipe 7694 ft.

MONTEREY COUNTY—Pacific Inland Oil Co.'s No. 1A, 19-23-15, dr shale 1938 ft.

SAN LUIS OBISPO COUNTY—Kent and McDonald's No. 1, 3-32-22, dr shale 2278 ft. Central Coast Investment Co.'s No. 1, 1-28-21, dr shale 950 ft. Emerich Oil Corp.'s No. 1, 13-28-12, lcn.

STANISLAUS COUNTY—Bud Hilderbrant's No. 1, 36-6-7, new rig.

TULARE COUNTY—Tulaco Oil Co.'s No. 1, 17-22-22, lcn. Ellis and Sanford's No. 1, 20-24-33, dr shale 1920 ft.

SOUTHERN CALIFORNIA

Completion

ROSEMEAD—
Rancho Oil Corp.'s Harmon 1, 30-1-11 . . . . . * 5975

ALHAMBRA—Yellowstone Oil Co.'s Huntington 1, 24-1-13, sd 3919 ft.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr shale 700 ft. Simi Oil Co.'s No. 1, 18-1-17, dr shale 3035 ft; Hearst 2, 18-1-17, rigging up cable tools.

FULLERTON — Standard's Bastanchury 1, 21-3-10, co to 5885 ft, td 8144 ft, will plug again and make test.

LYNWOOD—W. L. Jones' Graham 1, 31-2-12, rigged to sp.

MONTEBELLO — Wardell and Menichin's No. 1, 7-2-11, lcn.

MONTEREY PARK—Celito Oil Co.'s Jepson 1, 25-1-12, swabbing water 5217 ft, may drill deeper.

NEWHALL—O. C. O. Oil Co.'s Wilmon 1, 14-3-16, dr shale 1138 ft.

NEWPORT—Ajax Pet. Co.'s B. G. L, 16-6-10, dr hard shale 5728 ft. Orange County Refining Co.'s No. 5, will deepen from 1125 ft. Superior's Irvine 1, 27-6-10, dr shale 3190 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-2-16, 6⅝-inch cas cmt 6048 ft, td 7330 ft, will drill out.

PLAYA DEL REY — Cooperative Development Co.'s No. 1, 26-2-15, rigging rotary.

PUENTE HILLS—Eldorado Oil Co.'s Baird 1, 30-2-9, dr hard sand 2235 ft, showing oil and gas.

SAN FERNANDO — El Cabellero Estates' No. 1, 23-1-16, dr hard sand 1425 ft. Mack Oil Co.'s Deer Lake 1, 6-2-16, dr hard sand 1175 ft.

WILMINGTON—Ranger Pet. Corp.'s Watson 2, 21-4-13, dr shale 374 ft.

COLORADO

ADAMS—Hills Dome Lease Dev. Co., se 27-38-64w, dr 3745 ft.

ARAPAHOE—McDeb Drlg. Co., Fitzsimons 1, ne 7-4n-68w, dr 5811 ft.

BOULDER—C. T. Ahlstrand's Woodley 1, ne 8-3n-70, dr bel 505 ft. Julius Williams, 6-1n-71w, dr 362 ft. Independent O&R Co., Blair-Winter 1, nw 25-3n-71, abd at 200 ft.

ELBERT—Belmont Oil Co., sw 27-3s-64w, dr 3742 ft.

EL PASO—Gulf States Oil Corp., Cannon 1, ne 10-16s-66w, prep to res at 1025 ft.

GRAND—Oil Mineral Lands, Inc., McElroy 1, sw 14-2-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, run 6⅝-inch at 4100 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, rig up. Klem Pete Corp.'s Olbert 1, se 9-26n-12w, stand 3125 ft. J. W. Irwin & Co., Doescher 1, nw 29-33n-12, coring at 3140 ft. Phipps et al, nw 9-33-13, dr 470 ft.

LARIMER—Mayer Oil Co., No. 1 Reed, nw 28-4n-69, prep to res at 2400 ft. P. J. Mosher, Inc., sw se 17-4n-69, dr 740 ft. Colorado Producers, Inc., Forster-Motz Reservoir 1, se se 17-4n-69, dr 1000 ft. Consolidated Drlg. Co.'s Maxwell 1-A, ne ne 25-8n-70, pulled 12¼-inch and rerun. Stanley M. Barrows' Munroe 1, nw ne 26-11n-69, ro res at 1050 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, fsh 3425 ft. L. Leonard Smith, et al, 36-14s-57w, prep to res 3449 ft.

MOFFAT—Ohio Oil Co., Bogenschultz 1, se 9-6n-91, mvg in.

MORGAN—Ind. Terr. Illum. Oil Co., State 1, ne 16-1n-57w, milling on iron 5905 ft, td 5920 ft. Badger Creek O&G Co., sw 2-2n-57w, dr 1300 ft. Colo. Ass. Oil Co.'s Pumphrey 1, se 14-4n-58, cem 5815 ft, td 5845 ft. Tulsa-Fort Morgan Oil Co., Smith 1, nw 18-6n-60w, lcn. Prairie O&G Co., Mortier 1, nw 2-5n-60w, cem 9⅝-inch at 5290 ft. Juhan et al, Kent 1, sw 2-2n-57w, dr 1340 ft, 600 ft water in hole. Myers et al, Lee & Lusby 1, sw 6-2n-56w, bld foundations.

PARK—Anchor Oil Co., Esely 1, sw 35-22-67, dr 788 ft.

RIO BLANCO—California Co.'s Raven 1, se 20-2n-102, dr 2909 ft. Magnolia Pete Co.'s Maddock 1, se 9-2s-96w, dr 1675 ft.

ROUTT—Mid-Colo. Pete Corp., Omholt 1, ne 29-4n-87w, dr 1340 ft, gas showing.

WASHINGTON—Frank E. Kistler's Middlemist 1, se 14-4-56, stand 12½-inch set at 1503 ft.

WELD—Reiter-Foster's Johnson-Juhl 1, 14-6n-61w, dr in below 6650 ft. Reiter-Foster's Wilson 1, se 24-6n-61w, wait for rotary at 186 ft. Aztec Corp., State 1, se 16-6n-61w, 15½-inch cem 115 ft. Retter Oil Co., Smith 1, 14-1n-68w, dr out plug 1262 ft. Conoco, Gadbois 1, sw 24-6n-61w, fsh, td 6593 ft. Greenley Oil Co., Gadbois 1, 1-B, nw 25-6n-61w, cem 5550 ft. Gulf States Oil Corp., Bengston 1, nw 6-4n-63, lcn. Frank E. Kistler, Niles 1, se 13-6n-61, cellar. Prairie O&G Co.'s O'Toole 1, ne 33-7n-62w, rigging. Independent O&R Co., Schmidt 1, nw 19-6n-60, rig up. Tulsa-Ft. Morgan, Smith 1, nw 18-6n-60, lcn.

NEW MEXICO

BERNALILLO — Norrins Realty, Pajarito Grant, 22-9n-2e, dr 841 ft.

DE BACA—Saldo Dome Oil Corp., sw 6-4n-20e, resume 3189 ft. Landowners Oil Co., State 1, ne 16-1s-27e, dr 4625 ft.

EDDY—Western Drlg. Co., nw 29-17-29, dr 710 ft in anhydrite and brown shale.

DONA ANA—Viking O. & Dev. Co., 1, nw 26-23-5e, fsh 3065 ft.

GUADALUPE—N. M. Prod. & Ref. Co., McMillan 1, 24-5n-16e, run 12½-inch to s.o.w. 2600 ft.

LEA—Pacific Coast Oil Co., Blakey 1, nw 28-19-38, wait for orders.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10e, co 6171 ft.

OTERO—Ernest et al's se 20-26s-7e, fsh tools 1251 ft. Pasotero Oil Corp., Evans 1, sw 22-24s-12e, stand 1375 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s

Gov't 1, se 14-30n-7w, stand 380 ft. Governador Oil Co.'s 1, 12-29n-7w, dr 1800 ft.

ROOSEVELT—Peterson et al, Good 1, ne 32-5s-30e, ready to spud.

SAN JUAN—Kutz Canon O&G Co., Day 1, se 20-28n-10w, prep to run cas 3635 ft. Rio Grande Dev. Co.'s 2, 9-29-11, ur cas 1771 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, mixing mud, td 6035 ft. San Juan Leaseholds, Bowman 3, ne 30-30-15, sd 2685 ft. R. C. Oswell et al, nw 34-30n-11w, show at 1414 ft. Wnis. et al, Stallings 1, sw 17-25n-15w, stand 150 ft. Ortega et al, Westwater 2, ne 24-31n-18w, co 2190 ft, td 2460 ft. Dorothy Oil Co.'s Terwilliger 2, se 29-30-9, sd 1750 ft.

SANTA FE—Jones, Owsley et al, 5-10n-9e, dr 266 ft. Barton Ass'n, sw 6-10n-7e, dr 140 ft.

SAN MIGUEL—Starr Oil Co., Adams 1, ne 25-17n-16e, dr 5030 ft.

TORRANCE—Estancia Valley Carbon Dioxide Dev. Co., DeHart 2, se se 12-7n-7e, stand 495 ft. Fisher et al, 6-10n-7e, spdg.

MONTANA

CARBON—Corbett Roy. Co., sw se 1-6s-23e, dr bel 450 ft. Jack Creek Oil Co., 1, se 15-7s-23e, dr 1325 ft.

CASCADE—Buscher & Cassacy, Johnson 1, se 19-22-3e, fsh tools 1010 ft. Charles Merz et al, Sheffelt 1, sw 4-21-4e, dr bel 300 ft.

CHOTEAU — Williston-Shelby O&G Co., Flack 1, se 12-28-11e, sd 2867 ft, title troubles.

GALLATIN — Mont. Gas & Pete Corp., Adams 1, 35-1n-2e, spd.

GLACIER—Fulton Pete Corp., Blackfeet 1, ne 28-38-12w, cem 2710 ft. Browning Dev. Co.'s Reickhoff 1, ne 3-34-6w, rigged. R. C. Tarrant et al, Hagluns 1, sw 13-34-6w, test cem, td 1400 ft.

GOLDEN VALLEY—Golden Valley Oil Co., 28-6n-22, to res 1140 ft.

LIBERTY—Peoples O&G Co., First Nat'l Bank 1, ne 17-36-6e, dr 1800 ft. California Co.'s Utopia 1, se 11-33-6e, dr 3290 ft. Northland O&G Corp., Yurman 1, sw 32-33-5e, sd 3705 ft, wait for new dr line.

ROSEBUD—Prairie O&G Co., 1-XX, 26-10-39e, standing at 4555 ft in dark lime.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, straightreaming bel 5360 ft to cem at 5792 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, dr 2325 ft. Earl Oil Corp., Gad 1, se 22-22-8w, td 3730 ft.

TOOLE—Liquid Gold Oil Co.'s Elbert 1, ne 25-36-12, to run 5-inch to s.o.w. 2480 ft. Oregon Oil Synd., se 20-36-2e, dr 1550 ft, carry cas. Western Natural Gas Co., nw ne 26-37-4w, lcn.

YELLOWSTONE—Pan American Oil Synd., 23-2s-24e, hot water cem off with 8¼-inch, td 2095 ft. Peter Antonioli 1, ne ne 21-2n-25e, dr 2150 ft, 10-inch hole.

WYOMING

CARBON—Midwest Refining Co., U. P. 27, 27-11-81, dr by bit at 3970 ft. Prairie O&G Co., Bunker Hill 1, 29-27-87, dr 6075 ft.

CONVERSE—John Ackard, se 24-33-72, dr 1685 ft. Otto Olston 1, 1-32-74, sd for refinancing

FREMONT — Wiebolt et al, 35-33-99, dd from 1850 ft. Ward O&G Co., 28-34-90, 10M gas show at 2530 ft.

LINCOLN—Wyo. Prod. Co., 14-24-113, bottomed at 1700 ft.

NATRONA — Midwest's 11, nw 32-34n-77, stand 5340 ft. Midwest's Midway 1, ne 23-35n-79w, ripping 7-inch to plug back to second Wall Creek. Summit Oil Co., 21-33-80, set cas, td 1400 ft. Wyo. Imperial Oil Co., se 13-33-79, rig up.

NIOBRARA—Globe Pete Corp., 2-39-61, td 248 ft, last report.

SHERIDAN—R. & D. Oil Co., se 27-57-87, dr 1230 ft.

SWEETWATER—Vermillion O&G Co., sw sw 16-12n-99w, ur 8¼-inch at 4685 ft.

WASHAKIE—Ohio Oil Co., Lot 14, 19-45-92, dr 8200 ft, headed for the Muddy.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, td 1400 ft. Julius Peters et al, Witzell 1, se nw 30-46-64, dr 3025 ft. Stockade Anticline Synd., 32-45-60, dr. Gose Oil Synd., Gose 1, 28-47-65, dr 5035 ft.

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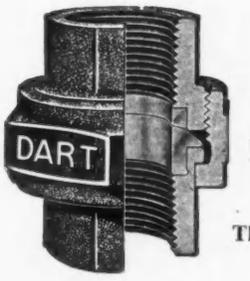

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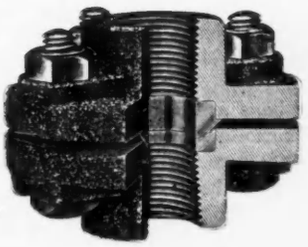


Letters of Paul Peebles, P. S. G.

▼ ▼ ▼

My dear Cleopatra:

Cleo honey I believe I told you last week that unitization is going to be the theme song when the brains of the industry goes in a huddle up to Chicago this week, only all of the brains aint going to be there honey on account of I cant get away from a whole lot of matters I have to attend to here. I guess some of the fellows will be mighty sorry that I am not there to tell them what I think about the proposition and I am wondering if any of them will ask Mr. Doherty what he thinks. I have been kinder against it myself on personal reasons on account of I am for the independent even when he is wrong on account of it has not ever gone to my head if some of the presidents of some of the biggest companies do ask my advice sometimes about things.

But late developments is kinder got me to wondering just what do the independents want. They have beat the big boys to the unitization business. What I mean is that Charley Roeser has put over a deal on unitizing all the independent associations in Texas so that for the time being at least all the names they call each other will be in the same organization. Maybe the governor and the commission now can hear stuff without having somebody else come in right away and want it to be another way. Well anyway it has been put over and now it is about a dozen presidents of associations which will have to join the Lions club or be superintendent of the Sunday school to get them some local prominence.

But they is going to have about 100 vice-presidents to the association which will help some and it looks like maybe enough members that the dues wont have to be too heavy to pay rent on headquarters offices.

If I was called on to vote for the most useful citizens in the oil business in Texas right now I would vote for Charley Roesser first for getting everybody lined up so they can do their fighting among themselves like the democrats and then get together when they go to the public or the army or whatever they want to handle. Second would be that fellow Hunt which is trying to make it so that the men what works in the oil fields can all have some sort of a living and not part of them have all the work and the rest of them do all the starving. I see where the idea is spreading, which should please Capt. Lucey only he is also one of the boys which is urging on the program of curtailing drilling by putting proration on the acre basis instead of by the well. Some of the littler boys are not for that, along with them in East Texas which wants dime oil. One thing they have all overlooked about that drilling is that it is such easy drilling and so few dry holes and the further fact that the companies was all organized to drill oil wells and it being a old spanish custom in the oil business to get oil and not be worried about money if we just get oil. Deep down in their hearts the whole kaboodle of East Texas is more proud of making a new record on wells completed and initial production last week than they was of the new price increase that come at the same time. Looks like some people thinks they are rich if they have a oil well even if it is costing them money to keep it. Every body that can borrow the money is drilling a well and cussing the big boys because they can drill more, and all the time knowing that the more wells they have the less oil the soldiers will let them take out of it. But I say on behalf of labor, let them go. When a well is going down a drilling crew is eating and every joint of pipe means another bucket of smoke in Pittsburgh.

I often wonder, honey, why the API wants to have meetings way up in Chicago but it is a good place for it this year on account of the boys will all be feeling good there even if Al Capone and all his gang is plum out of business. It looks like now we are nearly to the corner where prosperity is just around and Chicago is the place that knows most about it. The reason is wheat going up like it has. After everybody has been talking about the gold standard and all that kind of stuff, all of a sudden they wake up to the fact that the buscuit standard is still what is running the world.

Well I guess you do not read the papers much, honey so mabe you do not understand what I am telling you, so I will explain.

I guess you heard about that fellow down to Baytown which got put in jail for crasy on account of he said the Hoover administration was a success. (I wish it had been that onnery Slim.) Well dont tell nobody I said this because they might put me in too, but it looks like now mabe it will be a success before it gets through, on account of statesmanship I guess, only it looks to me kinder like the statesman part is always a little behind. I guess you might say he is a salt-rising president in a baking powder time, if you know what I mean. And if you dont know what I mean well I will explain. After most of the banks was gone broke he started a bank to keep banks from going broke, and after the farmers had already sold their wheat he had some of the boys he had sent out to find out about them things write home that the wheat crop is bad where they said it was going to be good, so the price of wheat goes up and everybody is happy, especially them which has boughten the wheat from the farmers. Cotton is about the same way. Now if he can get South America to all go to salt water and a earthquake to mess up Russia and Roumania and Persia and Egypt and Borneo and them islands to sink so the American oil industry can look after its own affairs without bothering about the rest of the world, well he will be a statesman sure enough.

Well honey I guess you have been thinking that what is the matter with the oil business is that it was too much oil and everybody else was about decided that way but now comes along a fellow named Garfias that says it aint so and has gone even back to counting up how much shale oil it is when we need it which he says might not be long, and then on top of that they are shipping gasoline from Romania to Detroit and going up through Canada to do it. Can you figure that out? And on the way coming over the ship which brings it probably passed more oil going the other way than the whole of Romania can produce. Even at that some people is getting excited about it because it has been done twice, only I guess it wont be done no more this year if winter sets in pretty soon. I do not know if it comes on the market a straight gasoline or if it will be a fourth grade.

I guess honey you would a whole lot rather I was to tell you about myownself than keep on worrying you with stuff about business, but things is in such a shape that I do not hardly have time to think about nothing else but business and the shape the world is in and it getting better on account of it can't get no worse. I started out to see you this Sunday but when I started out in my car the widder where I boards said she would like to go along and I knowed, honey, that you would not want to see me with no other woman so I did not come down that way only I did go down on the other side of the bayou to Morgan's point where I could look over there and see the derricks in Goose Creek and I knowed you was near to them and I was not far from you so I just turned around and come on back to Houston. But you do not need to worry none, honey, because I am coming down there some of these days real soon, and in the meantime you do not need to pay no attention to what anybody tells you. If that Slim tells you he seen me with a woman you can just know he is not telling you the truth because I would not go nowhere with a woman which would go the places where he goes and anyway it aint none of his business, and I am true to you anyway. But I am just telling you in case you hear anything.

Your loving,

PAUL.

FORWARD!

BETWEEN October 19th and November 25th America will feel the thrill of a great spiritual experience. In those few weeks millions of dollars will be raised in cities and towns throughout the land, and the fear of cold and hunger, will be banished from the hearts of thousands.

Be sure that you do your part. Give to the funds that will be raised in your community. Give liberally.

And know that your gift will bless yourself. It will lift your own spirit. More than anything else you can do, it will help to end the depression and lay the firm foundation for better times.

The President's Organization on Unemployment Relief

Walter S. Gifford

Director

Committee on Mobilization of Relief Resources

Owen D. Young

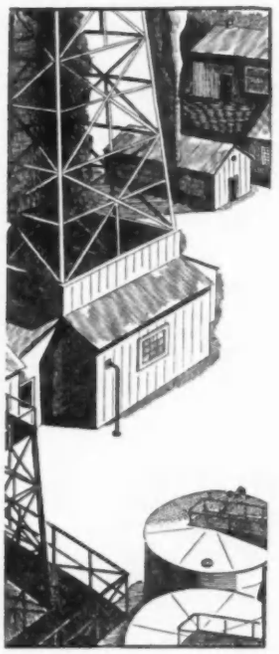
Chairman

The President's Organization on Unemployment Relief is non-political and non-sectarian. Its purpose is to aid local welfare and relief agencies everywhere to provide for local needs. All facilities for the nation-wide program, including this advertisement have been furnished to the Committee without cost.

AMERICAN

STEEL SHEETS *for* EVERY PURPOSE

AMERICAN SHEET AND TIN PLATE COMPANY PITTSBURGH



Black and Galvanized Sheets, Special Sheets, Tin and Terne Plates — also USS Stainless and Heat Resisting Sheets and Light Plates

To withstand Time and Weather, use

KEYSTONE COPPER STEEL AMERICAN SHEET AND TIN PLATE COMPANY PITTSBURGH

KEYSTONE

Rust Resisting Copper Steel Sheets

AMERICAN products are carefully manufactured in every detail—both mechanically and metallurgically. This Company is the leading maker of high grade Sheet and Tin Mill products for all known uses to which sheet metals are adapted; also KEYSTONE Copper Steel—the original *rust-resisting copper steel alloy* for exposed sheet metal.

USE KEYSTONE COPPER STEEL FOR

Tanks, Barrels and Drums

AND FOR ROOFING AND SIDING

Service — Satisfaction — Economy

Used by prominent tank, barrel and drum manufacturers. APOLLO-KEYSTONE Galvanized Sheets are specially adapted for shops, sheds, boiler and belt houses, and oil country construction. Sold by leading metal merchants.

U S STEEL

American Sheet and Tin Plate Company

GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

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SUBSIDIARY OF UNITED STATES STEEL CORPORATION

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UNIVERSAL ATLAS CEMENT COMPANY

Pacific Coast Distributors—Columbia Steel Company, Russ Building, San Francisco, Calif. *Export Distributors*—United States Steel Products Company, 30 Church Street, New York, N. Y.

New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

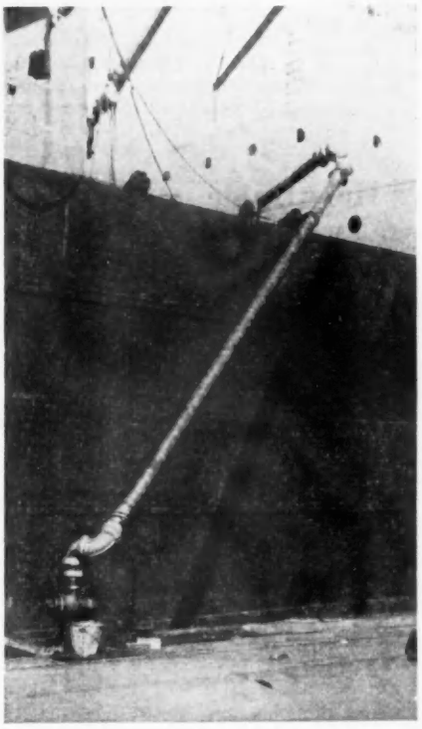
▼ ▼ ▼

All-Steel Ship Loading Hose

HAMER OIL TOOL COMPANY, LTD.

The Thrift Corporation, Houston, exclusive distributors outside of California for Hamer Oil Tool Company, Ltd., products, has recently started marketing the new Hamer all-steel hose for loading and unloading tankers of crude oil, kerosene, gasoline, or for fueling ships at terminals. Manufacture and introduction of the all-steel hose for terminal loading results from the demand for equipment to more rapidly handle oil and which would better withstand wear from both high pressure and chemical reaction.

The all-steel loading and unloading hose now being commonly installed along Gulf ports by oil companies consists of the flexible Hamer 90 degree joint with lengths of Naylor spiral welded light weight six-inch pipe which weighs 9½ pounds per foot. The flexible joints allow the hose to swivel in all directions, even making complete U-turns, as is shown in an accompanying illustration. The light weight pipe allows ease of handling and portability. The joints are equipped with four ball bearing roller points and are packed with an oil resisting insert which holds pressure and fluid up to 750 pounds per square inch, the inserts being specially manufactured for this purpose.



Hamer Six-Inch Unloading Hose

The hose has been tested on the job in many cases to the above mentioned pressure on high gravity gasoline without leaks, thus eliminating a common fire hazard at the terminal point.

The swivel effects of the joints is designed to eliminate strain put on the pipe sections and swivel joints prevents binding or twisting of the hose at any angle. The 90 degree swivel joints permits the hose to be folded as a jackknife, taking up little space when not in use, and making it easily transported.

The hose can be made in any desired length by adding additional joints and lengths of pipe, and can be placed in close quarters to meet any required bend or angle. The average pipe length is six feet. While six-inch and eight-inch are the popular sizes, the Hamer joints are available in any size required.

All joints carry Alemite fittings for outside lubrication. All joints are made of Chrome nickel steel, accurately machined. The joints are furnished flanged on one end for connection to the boat and dock terminal riser.

More detailed information on this new hose is available by writing The Thrift Corporation, 953 Merchants & Manufacturers Building, Houston, Texas.

Welding Fittings

MIDWEST PIPING AND SUPPLY COMPANY, INC.

Midwest Piping and Supply Company, Inc., Los Angeles, has announced a line of welding fittings which differ in many respects from the conventional fittings on the market, according to the manufacturers.

The welding ells, made in 45 and 90 degree types, stress dimensional accuracy and uniformity. Tangents on the ells are designed to reduce time and cost of installation, a quarter inch of tangent being provided for each diameter inch of the pipe. Each ell is made from one piece of plate.

Midwest welding heads have an ellipsoidal form to reduce the unit stress in the metal. The design of them is such that the circumferential weld to the pipe is entirely in tension as a result of the long tangent of the heads. Ends of the heads are beveled 45 degrees for butt welding.

Welding sleeves in the Midwest line are used to reinforce a butt weld between two pieces of pipe. It helps relieve the butt weld of bending and tensile stress. The transverse recess in the sleeve permits its application over the conventional line weld.

The saddle fitting is for reinforcing the junction of the neck and body of a weld header and relieving it of much of the tensile, bending and shearing stress to which the junction is submitted.

Complete information on these fittings may be obtained by writing Midwest Piping and Supply Company, 1450 South Second Street, St. Louis, Missouri.

Totco Drift Recorder

TECHNICAL OIL TOOL CORPORATION

Technical Oil Tool Corporation, Los Angeles, recently introduced a device for promoting straight hole drilling known as the "Totco Drift Recorder."

The outstanding feature of the Totco recorder is its accuracy, plus its simplicity of operation and the immediate availability of the drift reading to the driller on the rig and to the engineering force. These readings are taken instantaneously at the bottom of the hole.

In running a Totco recorder, a new chart is placed in the

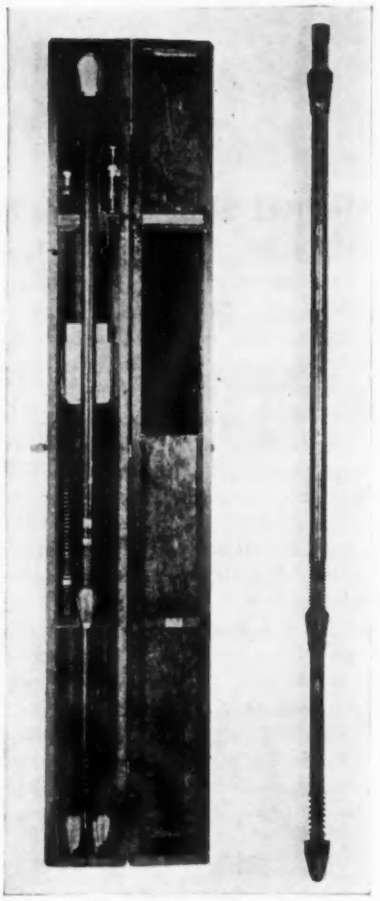
chart holder plug; the setting device is then turned to the time that the instrument is desired to make its record. The next step is to push the setting device down in the instrument and then pull it out. This action starts the timing mechanism in motion which causes the needle to punch a hole in the chart disc at the exact time the setting device has been set for. The time at which the instrument has been set is noted so as to regulate properly the time on bottom. Then a shart holder plug is screwed into the body of the instrument, whereupon it is placed into a go-devil body; the lock plug is screwed into the go-devil body and the Totco recorder is then ready to be dropped into the drill pipe.

The drilling string can be rotated and circulation continued until one-half minute before the time that the instrument is set to make its record. At that moment rotation is stopped and the drill stem is held stationary for one minute; the record is made and the mechanism of the instrument automatically locks in position. The drill pipe can then be brought out of the hole, bearing with it an immediate, permanent, and easily read record of the drift from vertical.

The standard Totco drift recorder is furnished with recording discs which read to 10 degrees. A special attachment can be furnished to read as high in degrees as required, for unusual conditions.

Additional details may be had by addressing Technical Oil Tool Corporation, Ltd., 350 South Bristol Avenue, West Los Angeles.

Above: Principal parts of Totco Recorder. Left: Setting device. Center at top: Chart holder plug with chart; at bottom, mechanism. Right: mechanism case.

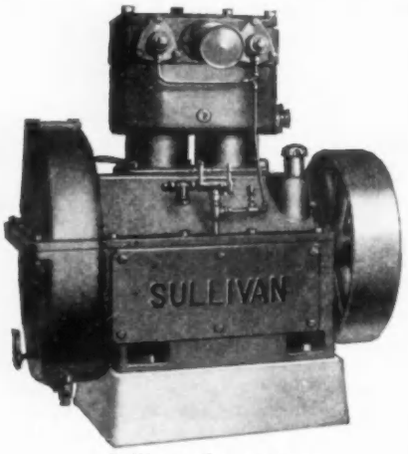


Above: Totco Recorder with accessories packed for delivery to well. Right: Totco Recorder in position in "go-devil" ready to be dropped into well.

Vertical Compressor

SULLIVAN MACHINERY COMPANY

Sullivan Machinery Company, Chicago, has placed on the market a two cylinder, single stage, vertical, belt driven compressor known as "WL-2" which has a rated displacement of 119 or 175 cubic feet per minute, depending on the size bore and stroke.



Sullivan Compressor

Principle features of the WL-2 compressor are: compactness, lessened vibration, automatic lubrication, automatic inlet and discharge valves, water cooled cylinder barrels and heads, automatic sweep control unloading device.

Cylinders of the WL-2 compressor are cast in one block and bolted to the crank case. The design of the valves is such that none of their parts can come loose and fall into the cylinders, according to the manufacturers. Complete details of the Sullivan WL-2 compressor may be obtained by writing Sullivan Machinery Company, 400 North Michigan Avenue, Chicago.

Straight Hole Guide

MacCLATCHIE MANUFACTURING COMPANY

MacClatchie Guide

MacClatchie Manufacturing Company, Compton, California, has placed on the market an improved "Reinie" straight hole guide and drill pipe protector which tends to eliminate twist-offs and to overcome whipping and vibration.

The guide is provided with double pin subs or sub, as illustrated. It has been improved by a strong reinforcement moulded into the rubber. The subs are of nickel steel, heat treated, with hardened washers. Four vertical channels in the rubber provide circulation. The guide and protector is supplied in two types: the sub type, as per illustration, and a regular type which slips over the drill collar. Both types permit the drill pipe to turn freely inside the guide, which remains relatively stationary in the formation.

Complete information on the Reinie guide and protector may be obtained by writing MacClatchie Manufacturing Company, Compton, California.

Manufacturer and Supply Dealer Notes

International-Stacey Corporation had on display at the American Gas Convention in Atlantic City a full size model, showing the seal of the Stacey-Klonne dry seal gas holder.

This new type of gas holder presents some very interesting changes in gas holder construction, eliminates the use of any liquid seals whatsoever and with it the cost of installing and maintaining pumps, heating and treating apparatus and the need for constant attention.

E. F. Houghton Manufacturing Company, Philadelphia, has issued an 148-page catalog titled "Vim Short-Center Drives," containing charts, tables and engineering data on 5000 standard Vim efficiency drives ranging from five to 100 horsepower.

Copies of the illustrated catalog may be obtained by writing E. F. Houghton Manufacturing Company, Philadelphia.

S. R. Dresser Manufacturing Company, Bradford, has announced the formation of Dresser Manufacturing Company, Ltd., Toronto, Ontario. D. B. McWilliams has been made director in charge of sales for the new company and maintains headquarters at 32 Front Street West, Toronto.

Robert J. Miller has sold his interest in Fluid Packed Pump Company Mid-Continent and hereafter will represent Shaffer Tool Works as exclusive distributor in the Houston territory.

Robert J. Miller soon will announce a new line of production equipment which will be handled from stores of Robert J. Miller Company at their various locations.

A new and complete oil and gas map of New Mexico has been issued by the State Bureau of Mines and Mineral Resources of the New Mexico School of Mines, Socorro. Printed in two colors, with the base in black and oil and gas data in red, the map is approximately 23 by 36 inches in dimensions, the scale being one to 1,000,000, or approximately one inch equals 16 miles.

Locations, total depths and results (by symbol) of approximately 1000 wildcat tests are shown on the map, together with the axes of nearly 200 anticlinal structures. Known oil and gas fields are indicated by patterns, and locations of all main oil and gas pipe lines, refineries and natural gasoline plants are shown.

Dean E. Winchester, consulting geologist of Denver, Colorado, compiled the map for the State Bureau of Mines and Mineral Resources, in connection with a comprehensive report on the oil and gas resources of New Mexico, which will be issued as a bulletin of the bureau early in 1932.

The above described oil and gas map is being sold by the Bureau. The price of the map printed on paper is $1 and cloth-backed $1.50.

A very complete set of New Mexico well logs has been obtained by the State Bureau of Mines and Mineral Resources in connection with Mr. Winchester's work, and copies of them can be obtained from the Bureau at moderate prices.

Things to Remember in Tank Roof Welding

By GEORGE G. LANDIS
Chief Engineer, The Lincoln Electric Company, Cleveland, Ohio

DUE to varying conditions it is extremely difficult to set up a standard procedure in any field of construction work, but there are certain "kinks" which may be applied at the direction of the engineer to speed up the job and lower costs.

In the construction, or, as with the case in point, reconstruction of storage tank roofs for the petroleum industry, time and security are important factors. Speed and strength were sought when the tanks shown in Figure 1 were re-roofed by the shielded arc process of welding, which allowed a full fillet weld to be made at the rate of 40 feet per hour with Fleetweld electrodes and a "Stable Arc" welder. Welds made by this process have greater tensile strength, higher ductility and better resistance to corrosion than mild steel.

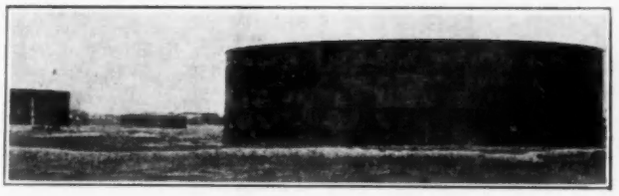


FIGURE 1

The tanks, owned by Sparco Refining Company, Shreveport, Louisiana, are of 80,000 barrel capacity and have the cone type roofs of 3/16-inch steel plate. On this job the plates were not only carefully fitted before welding but they were raised above the roof columns with wood blocks about two inches thick. After the roof plates had been fused into a single unit with the arc, the blocks were removed, thus obtaining a certain amount of slack in the roof to allow for residual strains caused by the heat of welding.

Tank roofs welded in the manner shown are absolutely leakproof and permanent. Tests made with soap water and compressed air showed but two leaks in the roof shown in Figure 2. In the welding of tank roofs a lap weld is used and in most cases buckling of the plates is not considered undesirable.

It is advisable, however, that the welding process used insure a weld deposit free from oxides and nitrides which weaken and embrittle the metal. The shielded arc process will produce such welds at speeds two to four times as great as when ordinary welding methods are specified.

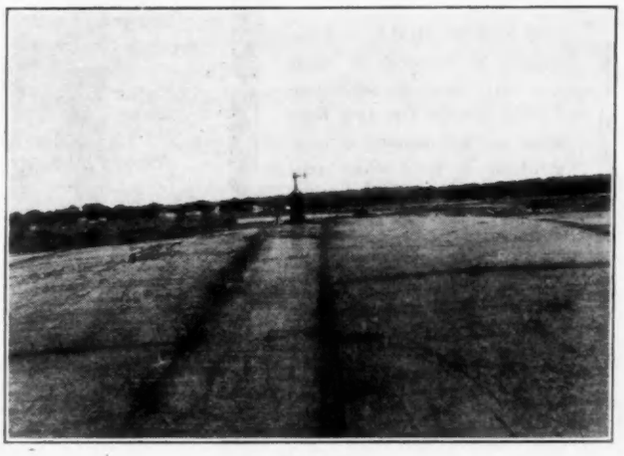


FIGURE 2

They Take Plenty of Punishment ... and Like It!

APPLEMAN GUMBO BITS are strong because they are made of the best materials, are correctly designed, and long proven on the lease.

WATER COURSES lead direct to cutting edge, producing maximum cooling effect.

SELF SHARPENING EDGES due to concavely formed blades.

SIDE WALL CUTTING: Cuts side wall as it drills. Accomplishes full round hole and well prepared side wall. Holds gauge longer. Reaming rarely necessary.

STRAIGHT HOLE: Less weight is needed to feed the bit. Drillers who use APPLEMANS for the first time are astounded at how straight a hole they can drill.

WRITE FOR COMPLETE INFORMATION

B. K. APPLEMAN
BEAUMONT, TEXAS

Squeaks from the Bull Wheel

▼ ▼ ▼

An absent-minded man called upon his equally absent-minded physician, and they passed a pleasant evening together, playing checkers and exchanging anecdotes. Finally came the hour for parting and the visitor exclaimed:

"Doctor, I had some errand here. Oh, yes, now I recall it. Our maid has fainted and we want you to see her right away."

"That reminds me," replied the doctor. "Your wife wanted you on the telephone a while ago. The maid died."—American Legion Monthly.

Hi: "My son's got a job driving a truck in New York City."

Ram: "Wal, tel him to keep off Wall Street; that's where all those crashes happen."

The pastor was examining one of the younger classes and asked the question, "What are the sins of omission?" After a little silence, one young lady offered:

"Please, sir, they're sins we ought to have committed and haven't."

Rastus: "Sambo, if de good Lawd had to take away either the sunshine or the moonight which would you prefer?"

Sambo: "Why de sunlight of co'se. De sun shines in de daytime when it's light anyway, but the old moon she light up things when it's dark."

You know, dear, every time I kiss you it makes me a better man.

Well, you don't have to try to get to Heaven tonight.

An old negro went to the office of the Commissioner of Registration in a Missouri town and applied for registration papers.

"What is your name?" asked the official.

"George Washington," was the reply.

"Well, George, are you the man who cut down the cherry tree?"

"No suh, I ain't de man. I ain't done no work for nigh onto a year."

Mother, I can't go to school today.
Why?
I don't feel well?
Where don't you feel well?
In school.

"Rastus, I am sorry to hear that you have buried your wife."

"Yas Suh, boss, I just had to—she was daid."

"What did your boss say when you told him it was triplets?"

"He made me head of my department."

"What department are you in?"

"Production."

A steamship company wired the captain of one of its ships—"Move heaven and earth and get here Friday."

The captain's reply next day—"Raised hell and will get there Thursday."

Several drummers were seated in the smoking compartment of the train. They were bemoaning the generally demoralized conditions of business, as they found it. Finally they turned to the quiet little man in the corner.

'And how do you find things, brother?"

"Never better since I've been on the road."

"For the love of Pete, and what's your line, may we ask?"

"Selling red ink."

An Ohio man whose son was an applicant for a position in the Federal Civil Service, but who had been repeatedly "turned down," said: "It's sure hard luck, but Bill has missed that Civil Service again. It looks like they just won't have him, that's all."

"What was the trouble?" asked the friend.

"Well, he was kinder short on spellin' and geography an' he missed a good deal in arithmetic."

"What's he going to do about it?"

"I don't know," said the father. "Times are not so good for us, an' I reckon he'll have to go back to teachin' school."

"I'se sorry, Deacon Johnsing, to see you comin' outa dat bootlegger's house."

"Cain't help it Sister Goldbug, I'se gotta go home once in a while."

First Frenchman: "Zeez American football game ees well named."

Second Frenchman: "Ees it so?"

First Frenchman: "Oui, first ze team keeks, zen se umpire keeks, and zen ze whole crowd keeks."

Student (preparing essay): "What do they call those tablets the Gauls used to write on?"

Roommate: "Gaul Stones."

Mrs. Peck: "The young couple under this balcony are making love and I think he wants to propose. We oughtn't to listen. Whistle to him."

Hen Peck: "Aw, why should I? Nobody whistled to warn me."

Teacher: "Can anyone tell me what the 'land of Nod' is?"

Pupil: "Sure, that's where the yes men come from."

"Have you seen the mounted police of Chicago?"

"Gosh, do the gangsters stuff 'em as well as shoot 'em?"

"THE STRONGEST GEARED POWER FOR ITS WEIGHT IN THE WORLD"

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ALL STEEL HAND HOIST
SEATTLE, U.S.A.
TRADE MARK REGISTERED

PRICE $80

Steel Tail Hold Yoke $4 extra. Truck attachment plate $10 extra.

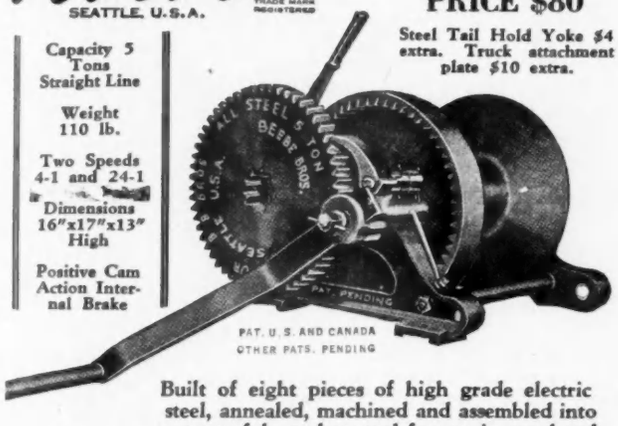
Capacity 5 Tons Straight Line

Weight 110 lb.

Two Speeds 4-1 and 24-1

Dimensions 16"x17"x13" High

Positive Cam Action Internal Brake



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OTHER PATS. PENDING

Built of eight pieces of high grade electric steel, annealed, machined and assembled into a powerful, modern tool for use in any hand hoisting, lowering or pulling. Quickly set up and easy to operate. Positive brake control.

Make this sturdy little worker a part of your regular equipment. It will handle innumerable jobs with a saving in both time and labor.

For Sale by

THE NATIONAL SUPPLY COMPANIES

BM PRODUCTS for pumping wells

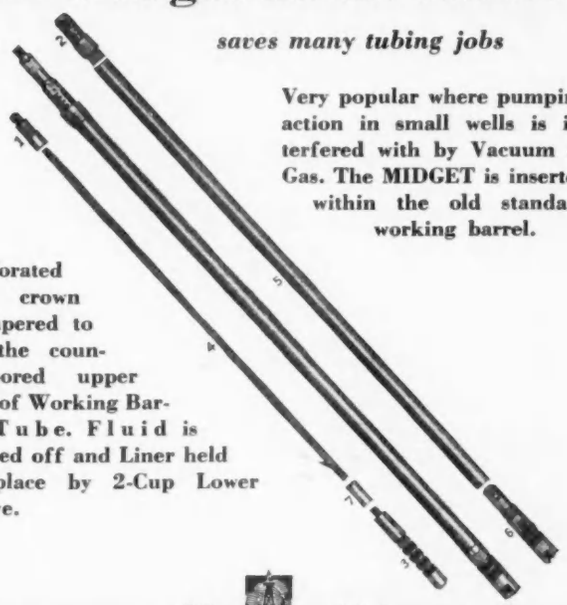
The KEY to LOWER LIFTING COSTS

CORRECTLY DESIGNED .. ECONOMICALLY PRODUCED
REASONABLY PRICED

The Midget Liner Barrel

saves many tubing jobs

Very popular where pumping action in small wells is interfered with by Vacuum or Gas. The MIDGET is inserted within the old standard working barrel.



Perforated top crown is tapered to fit the counter-bored upper end of Working Barrel Tube. Fluid is packed off and Liner held in place by 2-Cup Lower Valve.

BRADFORD MOTOR WORKS INC.
OIL WELL SUPPLIES
BRADFORD, PA. TULSA, OKLA.
EXPORT OFFICE—30 CHURCH ST.—NEW YORK CITY

Daily! Not After the Job is Done

Cost of *Crooked Drilling* and resulting increased pumping expenses *can be eliminated!*

. . . The Syfo Clinograph records deviation from the vertical in drilling progress.

. . . Daily use of the Syfo enables the driller to *control direction.*

. . . The test records are made on recording paper for reference purposes.

. . . The test is quickly and easily made *without the use of acids.*

SYFO Clinograph
("The Ink Bottle")

Well owners today are insisting that the hole be surveyed as it is drilled. Complete literature will be of vital interest to you.

Sperry-Sun Well Surveying Company
1608 WALNUT STREET, PHILADELPHIA, PA.

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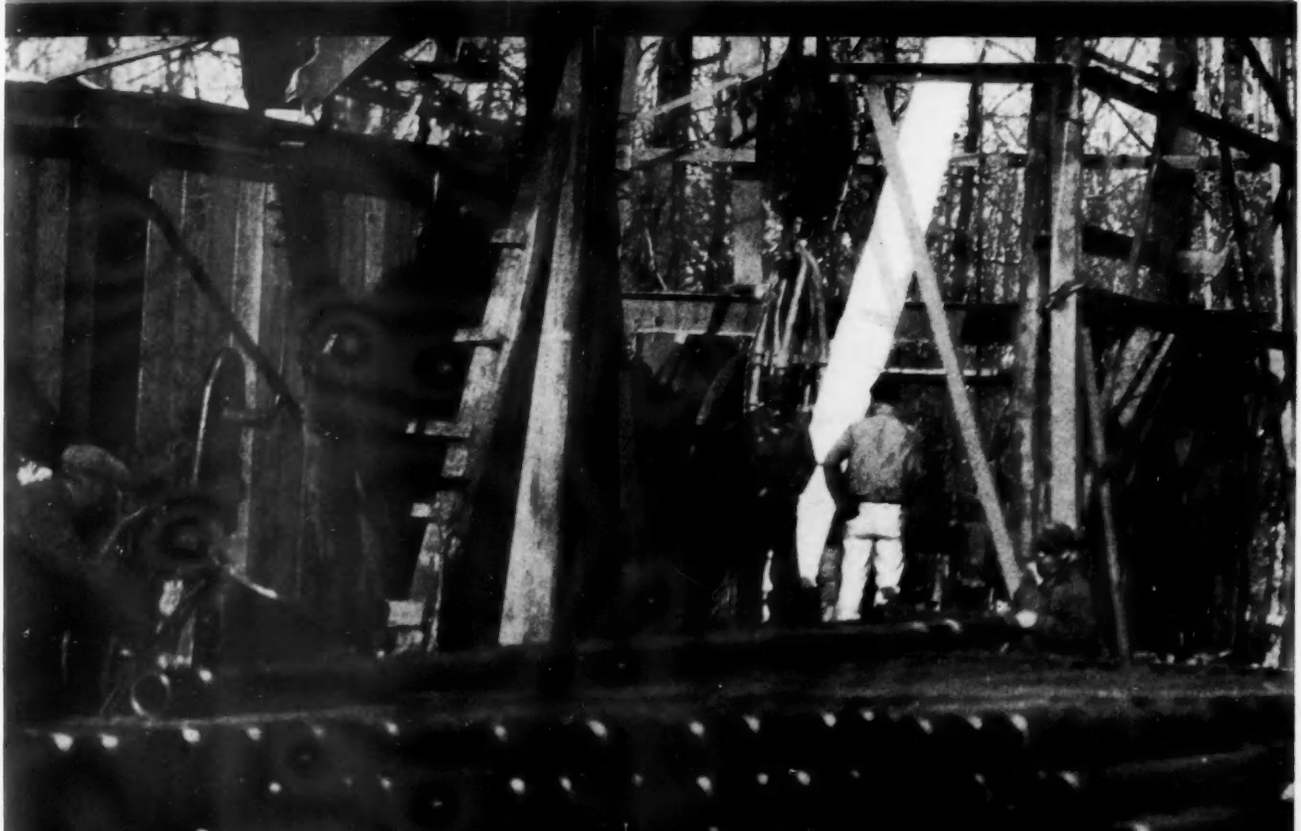
The *largest gas well* ever brought in east of the Mississippi ...



73,000,000 CU. FT.—1530 LB. ROCK PRESSURE

The Benj. H. Meeker Well No. 1, Tioga County, Penna., owned by the Penn United Gas Company, of McKeesport, Pa., S. J. Brendel, President. It was drilled by the Kemrow Company of Wooster, Ohio.

4200 ft. of 5½" O. D.—20# *"Standard" Seamless Casing* Grade "C" was used.

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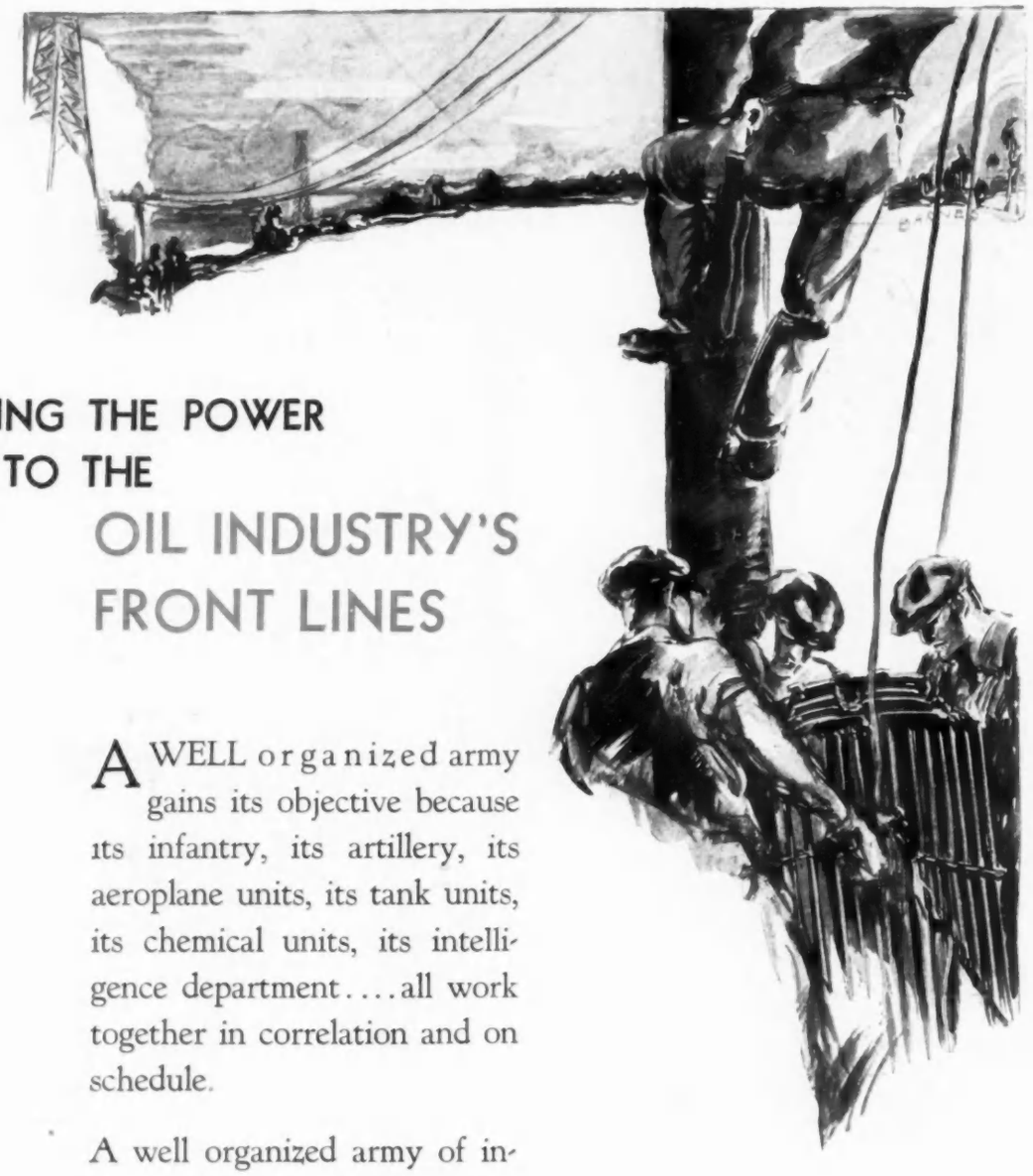

BRINGING THE POWER LINES TO THE OIL INDUSTRY'S FRONT LINES

A WELL organized army gains its objective because its infantry, its artillery, its aeroplane units, its tank units, its chemical units, its intelligence department.... all work together in correlation and on schedule.

A well organized army of industry likewise gains its objective when every factor works with every other factor, no one part holding back another.

It is the aim of the Gulf States Utilities Company to correlate its own army of workers with those of the oil industry so that power and light will be brought to pipe lines, to refineries, and to new oil fields at the proper time.

GULF STATES
UTILITIES COMPANY

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